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CONTENTS:

Contributions from the Gray Herbarium of Harvard University—No. CLXII. Identifications and Reidentifications of North American Plants. *M. L. Fernald.* 137

Relict Boreal Plants in Southeastern Minnesota. *J. B. Moyle.* .. 163

Another later Homonym. *Charles L. Gilly.* 163

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THE NEW ENGLAND BOTANICAL CLUB

Vol. 48. July, 1946. No. 571.

CONTRIBUTIONS FROM THE GRAY HERBARIUM OF HARVARD UNIVERSITY—NO. CLXII.

IDENTIFICATIONS AND REIDENTIFICATIONS OF NORTH AMERICAN PLANTS

M. L. Fernald

(Plates 1031–1050)[1]

During a somewhat searching study of different groups in the flora of eastern North America it is found imperative, if we are properly to identify our plants, to study the original descriptions and their citations and, when possible, to see the types or good photographs of the types. Otherwise, as in too many cases, we make wrong guesses and encumber taxonomy with erroneous and quite misleading names. In some of the present series of studies attempts have been made to place the names of the plants studied on a surer basis than heretofore.

The Identity of Quercus laurifolia (plates 1031–1036). *Quercus laurifolia* Michx. Hist. Chênes Am. Sept. tt. xvii. and xviii (1801), has so long been misinterpreted, at least since Elliott in 1824, that it becomes necessary to study in some detail the original material of Michaux and the two species which have figured in the misinterpretation of his clearly defined and beautifully illustrated species.

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[1] The cost of preparing and engraving the plates met in part through grants from the American Philosophical Society and from the Department of Biology of Harvard University.

The two principal elements involved in the problem are (1) *Q. hemisphaerica* Bartram as validated by Willd. Sp. Pl. iv[1]. 443 (1805), the southern tree (our PLATES 1035 and 1036) with full hemispherical or subspherical head; the coriaceous, dense and opaque, evergreen or only tardily deciduous (at least overwintering) leaves, with foliage of the fruiting branches oblong-lanceolate or -oblanceolate to narrowly elliptic or oblong, quite glabrous on both lustrous surfaces, cuneate at base, either acute or obtuse, 3–10 cm. long and 1–3 cm. broad, very short-petioled; leaves of vigorous vegetative sprouts often sinuate-dentate or -serrate; cup shallowly saucer-shaped, 1–1.5 cm. broad and 3–5 mm. high, with strongly flattened-rounded base; the nut 0.8–1.5 cm. long; the tree occurring on the outer coastal plain from Florida to eastern Texas, north to southeastern Virginia; and (2) the tree with longer, broader and thinner leaves membranaceous and showing, by transmitted light, a clear and intricate reticulation, the glabrate lower surface often with tufts of pubescence in the axils of the lateral veins; the cup deeply saucer-shaped, shallowly cup-shaped or turbinate, 1.5–2 cm. broad and 7–10 mm. high; this being the species described in detail by Sargent as his *Q. rhombica* Sargent in Bot. Gaz. lxv. 430 (May 15, 1918), our PLATES 1031 to 1033, with "Leaves rhombic, rarely oblong-obovate to lanceolate, acute or rounded . . . at apex, cuneate at base, . . . at maturity thin, . . . 9–12 cm. long and 3.5–5 cm. wide, with . . . slender primary forked veins; . . . falling gradually in early winter; . . . cup saucer-shaped to cup-shaped . . . From *Q. laurifolia* it differs in the shape of its thinner leaves . . . and in its larger fruit with much deeper cups". As a variety Sargent described material from a single tree, his var. *obovatifolia* (our PLATE 1034) which differed "in the obovate leaves at the ends of the branches, rounded or slightly 3-lobed or undulate at the broad apex".

On a succeeding page (432) Sargent discussed what he took to be true *Quercus laurifolia* Michx., with "leaves, which are thicker than those of *Q. Phellos* L., are dark green, very lustrous, and glabrous . . . usually not more than 7–8 cm. in length;" and (p. 433) saying "The laurel oak is not evergreen. Late in the winter the leaves begin gradually to turn yellow and then brown, and when the buds begin to swell at the appearance of spring

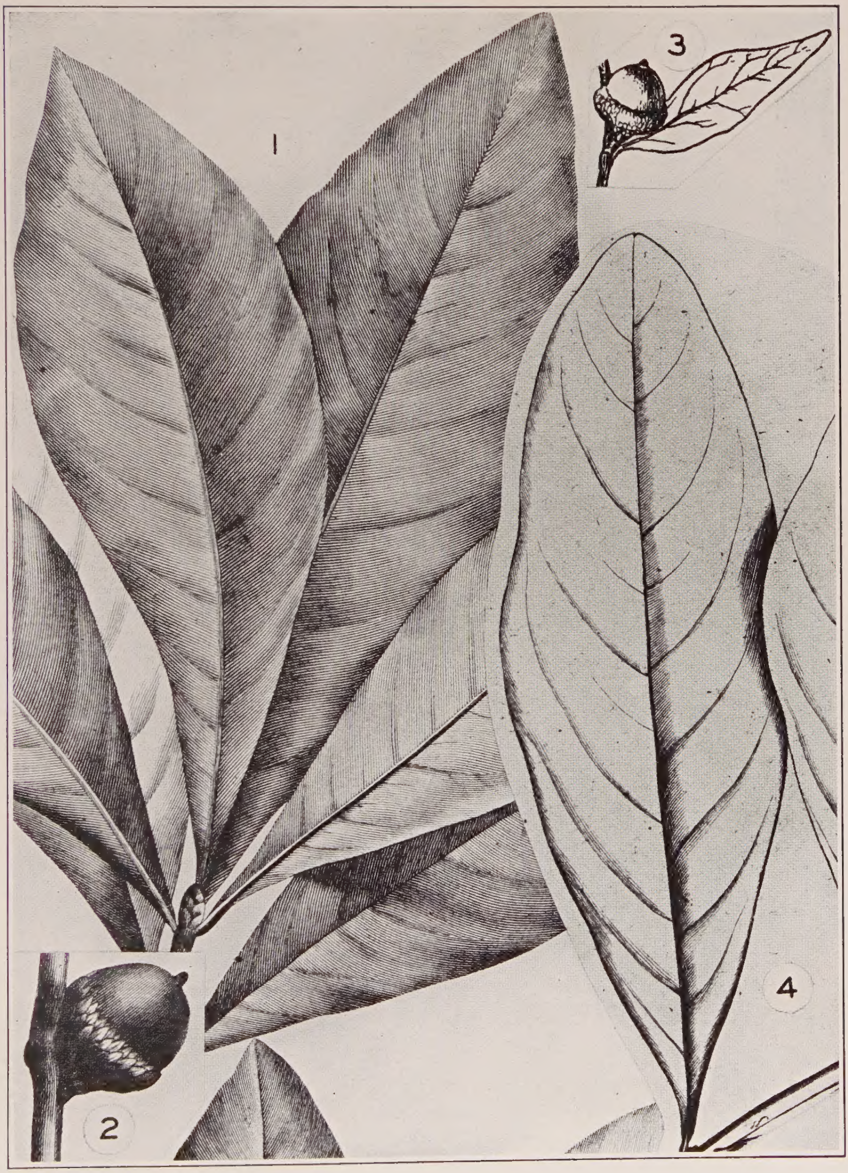
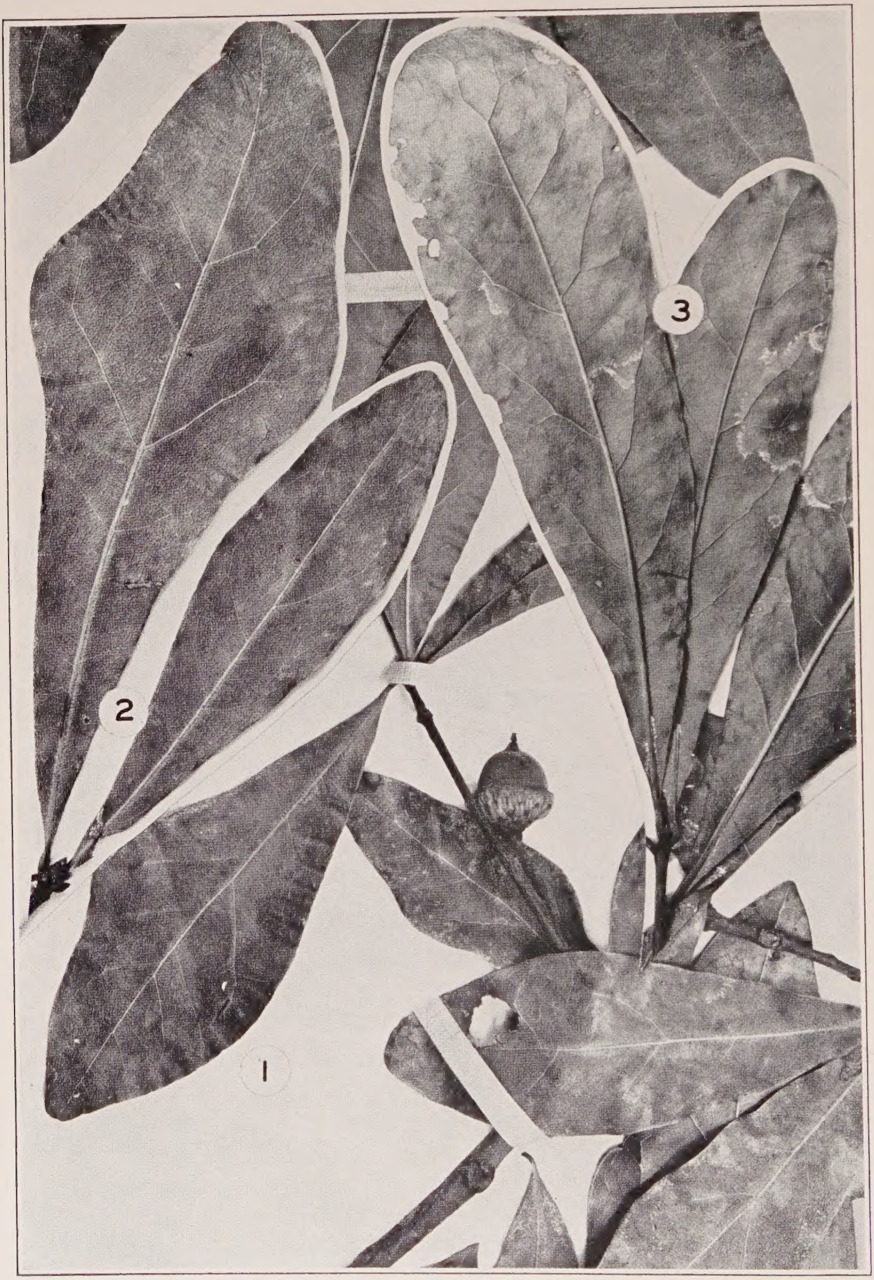


Photo B. G. Schubert

Quercus laurifolia Michx.: figs. 1 and 2, foliage and fruit, × 1, after *Michaux;* fig. 3, fruit of *Q. rhombica* Sargent, after *Sargent;* fig. 4, leaf, × 1, of *Q. laurifolia,* var. *hybrida* Michx. or var. *obtusa* Willd., after *Michaux.*



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Quercus laurifolia Michx.: figs. 1 and 2, fruiting branch and terminal leaves, × 1, from Virginia; fig. 3, leaves, × 1, of paratype of *Q. rhombica* Sargent.

drop almost simultaneously". Later, in his Man. Trees N. Am. ed. 2: 261 (1922) the "much deeper cup" "saucer-shaped or cup-shaped" of *Q. rhombica* became merely "a saucer-shaped cup", although the artist saw it and represented it (our PLATE 1031, FIG. 3) as definitely turbinate and half as high as broad. In this edition of Sargent's Manual the earlier and inclusive description of *Q. laurifolia* was not sufficiently altered to bring out all the contrasts between the two species as conceived by Sargent, for the "thicker" leaves were here described as "at maturity thin", although the cup of the species with narrow coriaceous and over-wintering leaves was correctly illustrated and described as "a thin saucer-shaped cup".

In his original discussion of *Quercus laurifolia* in his sense (i. e. *Q. hemisphaerica*), with leaves "usually not more than 7–8 cm. long" and, as stated in his Manual, "¾′ [*i. e.* 1.8 cm.] wide", Sargent commented on the plates which Michaux published with the original description of *Q. laurifolia:* "On the branches figured by MICHAUX the leaves are generally elliptic but sometimes slightly broadest above the middle, acuminate at the ends [in Michaux's var. *hybrida* (our PLATE 1031, FIG. 4) "obovate and rounded at apex"], and 6–12.5 cm. in length". Furthermore, Michaux's plate (our PLATE 1031, FIGS. 1 and 2) showed, in case of typical *Q. laurifolia*, a fruiting branch with leaves mostly 2–4 cm. broad, and a photograph in the Gray Herbarium of his type of the typical form shows very thin and translucent foliage (PLATE 1033, FIG. 1), the intricate reticulate venation too strongly suggesting that shown by transmitted light in leaves of the type of *Q. rhombica* (PLATE 1033, FIG. 3). Instead of being unusual the leaves shown by Michaux of his original *Q. laurifolia* and its var. *hybrida* seem to me inseparable from those of thoroughly characteristic *Q. rhombica*, originally described with leaves "9–12 cm. long and 3.5–5 cm. wide, with stout conspicuously yellow mid-ribs and slender primary forked veins"; and the type of the acute-leaved form (var. *acuta* Willd.) preserved at Paris could easily have come from material of the tree illustrated by Michaux. Still further, Michaux described the "cupule un peu turbinée" and illustrated it (our PLATE 1031, FIG. 2) as pretty definitely so, just as in his Manual (our FIG. 3) Sargent had so illustrated the cup of *Q. rhombica*.

It is most difficult for me to believe that, when Michaux described and illustrated as his new *Quercus laurifolia*, with evidently thinnish leaves (the type showing intricate venation even in the photograph) on a fruiting branch, the blades up to 12.5 cm. long and 2–4 cm. broad, many of them in outline (as well as size) quite like those of *Q. rhombica*, the cup definitely turbinate and shown as half as high as broad, the tree with these characters having the thin leaves often with tufts of hair persisting beneath in the axils of the veins,—it is most difficult to follow Sargent in believing that Michaux was wholly mistaken and really intended to describe a tree with much shorter and narrower, dense, coriaceous, overwintering, glabrous leaves and "thin saucer-shaped" cups. I see no way but to treat *Q. rhombica* as typical *Q. laurifolia*.

One week before the publication of *Quercus rhombica*, Ashe picked up the *Q. laurifolia* β. *obtusa* of Willdenow, Sp. iv[1]. 428 (1805), a substitute preferred by Willdenow for *Q. laurifolia hybrida* Michx., and made the specific combination *Q. obtusa* (Willd.) Ashe in Torreya, xviii. 72 (May 8, 1918), thus antedating *Q. rhombica* of May 15, 1918. Ashe, like Sargent and others, took as *Q. laurifolia* the species which Willdenow had properly defined in 1805 as *Q. hemisphaerica*, for Ashe said of his *Q. obtusa:* "This tree is undoubtedly closely related to *Q. laurifolia* as generally understood, but it can be readily separated from it by the leaves of vigorous shoots, which in *Q. laurifolia* are irregularly toothed, while in *Q. obtusa* the margins are entire. The cup also has a very pointed base, while the base of the cup in *Q. laurifolia* is flat." Had Ashe looked at Michaux's plate of the original *Q. laurifolia* (our PLATE 1031, FIGS. 1 and 2) he would have seen quite entire leaves and a cup with "a very pointed base", not at all "flat". He could also have seen that Michaux's diagnosis clearly said "Cupula subturbinata".

Somewhat later, Ashe, realizing that *Quercus rhombica* of May 15 was *Q. obtusa* of May 8, published a note in RHODORA, xxiv. 78 (1922), making the reduction, still apparently not knowing that *Q. obtusa* and *Q. rhombica* were phases of true *Q. laurifolia*. He then picked up Sargent's very unsatisfactory *Q. rhombica*, var. *obovatifolia* and made the combination *Q. obtusa obovatifolia* (Sarg.) Ashe, this variety, according to him, differing "only in its spatulate leaves with rounded apices." Sargent had said "obovate leaves at the ends of the branches, rounded or slightly 3-lobed or undulate at the broad apex", his type (our PLATE 1034) and only cited material being from "A single tree" from Beaumont, Texas, *E. J. Palmer*, no. 12747; Sargent accidentally omitting the last figure and adding: "The terminal leaves of this variety, . . . show a relationship with *Q. nigra* L.". They certainly do.

The more significant bibliography of *Q. laurifolia* is as follows:

Q. LAURIFOLIA Michx. Hist. Chênes Am. Sept. t. xvii (1801) and Fl. Bor.-Am. ii. 197 (1803). *Q. laurifolia hybrida* Michx. Hist. Chênes Am. Sept. t. xviii (1801). *Q. laurifolia α. acuta* and β. *obtusa* Willd. Sp. Pl. iv^1. 428 (1805). *Q. laurina* Raf. Alsog. Am. 27 (1838), not Humb. & Bonpl. (1809). *Q. laurifolia* β. *obtusa* Pursh, Fl. Am. Sept. ii. 627 (1814). *Q. Phellos*, var. *laurifolia* (Michx.) Chapm. Fl. So. U. S. 420 (1860). *Q. aquatica* β. *laurifolia* (Michx.) A. DC. in DC. Prodr. xvi^2. 68 (1864), in part. *Q. hybrida* (Michx.) Ashe in Proc. Soc. Am. For. xl. 88 (1916), not (Chapm.) Small (1903). *Q. obtusa* (Willd.) Ashe in Torreya, xviii. 72 (May 8, 1918). *Q. rhombica* Sargent in Bot. Gaz. lxv. 430 (May 15, 1918).—Florida to eastern Texas, north on coastal plain to Cape May, New Jersey.

My reason for including as separate names in the above synonymy both *Quercus laurifolia* β. *obtusa* Willd. (1805) and *Q. laurifolia* β. *obtusa* Pursh (1814) is, that Pursh did not cite Willdenow as the author of his variety. From the start this name has been the source of bibliographic or nomenclatural errors which make one blush for the performances of taxonomists of renown. In his Report on Forests of North America, 152 (1884) Sargent gave in his synonymy of *Q. laurifolia* "*Q. obtusa* Pursh, Fl. Am. Sept. ii. 627". This unintentional new binomial, which Pursh had not made, promptly appeared, correctly in this instance, in *Index Kewensis* under *Quercus* as "*obtusa*, Sargent . . . in syn".; and "*Quercus obtusa* Pursh" appears, as if made by Pursh, in Sudworth's Nomenclature of the Arborescent Flora of the United States (1897), in Trelease's writings and elsewhere, where some sort of verification might have been expected. Since the original *Q. laurifolia* var. *hybrida* Michx. (1801) was the sole basis of *Q. laurifolia* β. *obtusa* Willdenow (1805), the intricate and not very intelligent confusion of the two names must, unhappily, be investigated.

In Small, Fl. S. U. Se. 350 (1903), something quite different and based on *Quercus aquatica* Walt., var. *hybrida* Chapman, Fl. So. U. S. 421 (1860), this having nothing to do with *Q. laurifolia*, var. *hybrida* of Michaux, appeared as *Q. hybrida* (Chapm.) Small, although Small, with his customary "lack of time", left others to hunt up the place of publication of the basonym. Now *Q. aquatica* of Chapman's time was what has proved to be *Q. nigra* L. (1753) and his var. *hybrida* was evidently a form of it, with "leaves oblong or wedge-oblong, entire, emarginate, or 3-lobed at the summit", etc., surely having nothing to do with *Q. laurifolia hybrida* Michx. (our PLATE 1031, FIG. 4). Nevertheless, having subsequently decided that his *Q. hybrida* (Chapm.) Small was not worth maintaining, Small dropped it; but, under the already much discussed and nonexistent *Q. "obtusa* (Willd.) Pursh", he gave a single synonym, "*Q. hybrida* (Michx.) Small", Man. Se. U. S. 428 (1933), thus making still another useless binomial, this one invalid because published in synonymy! But when he published his *Q. hybrida* (Chapm.) Small in 1903, the author was not retarded because of the identical binomial (*Q. hybrida*) already published four times before, by Brotero in 1804, by Bechstein in 1843, by Hampton in 1886 and by Houba in 1887. As described by Chapman the basic name seems to have belonged to a tree very unlike the latter; but, as illustrated by Britton & Shafer, N. Am. Trees, fig. 254 (1908), its leaves and their venation are those of *Q. laurifolia*, the cup that of *Q. hemisphaerica*. Probably *Q. hybrida* (Chapm.) Small was an appropriate name.

In his monumental Histoire des Chênes de l'Amérique Septentrionale (1801) Michaux showed as *Quercus aquatica* the species now known to be *Q. nigra* L. in plates xix–xxi. Plate xx showed several different leaves, not all of them belonging to *Q. nigra* (*aquatica*) as now understood. Fig. 2 (our PLATE 1035, FIG. 1), especially, was a vigorous young shoot of an unnamed variety with the narrow leaves cut as in those of sprouts of *Q. hemisphaerica*. In a special paragraph at the end of his discussion of *Q. aquatica* Michaux commented on such foliage, saying:

> On trouve sur les dunes sablonneuses en Géorgie et en Floride, une variété de cet arbre à feuilles étroites, dentées irrégulièrement, et qui conserve ses feuilles pendant tout l'hiver. C'est probablement cette variété que BARTRAM a nommée QUERCUS *dentata* (*narrow leaved winter*

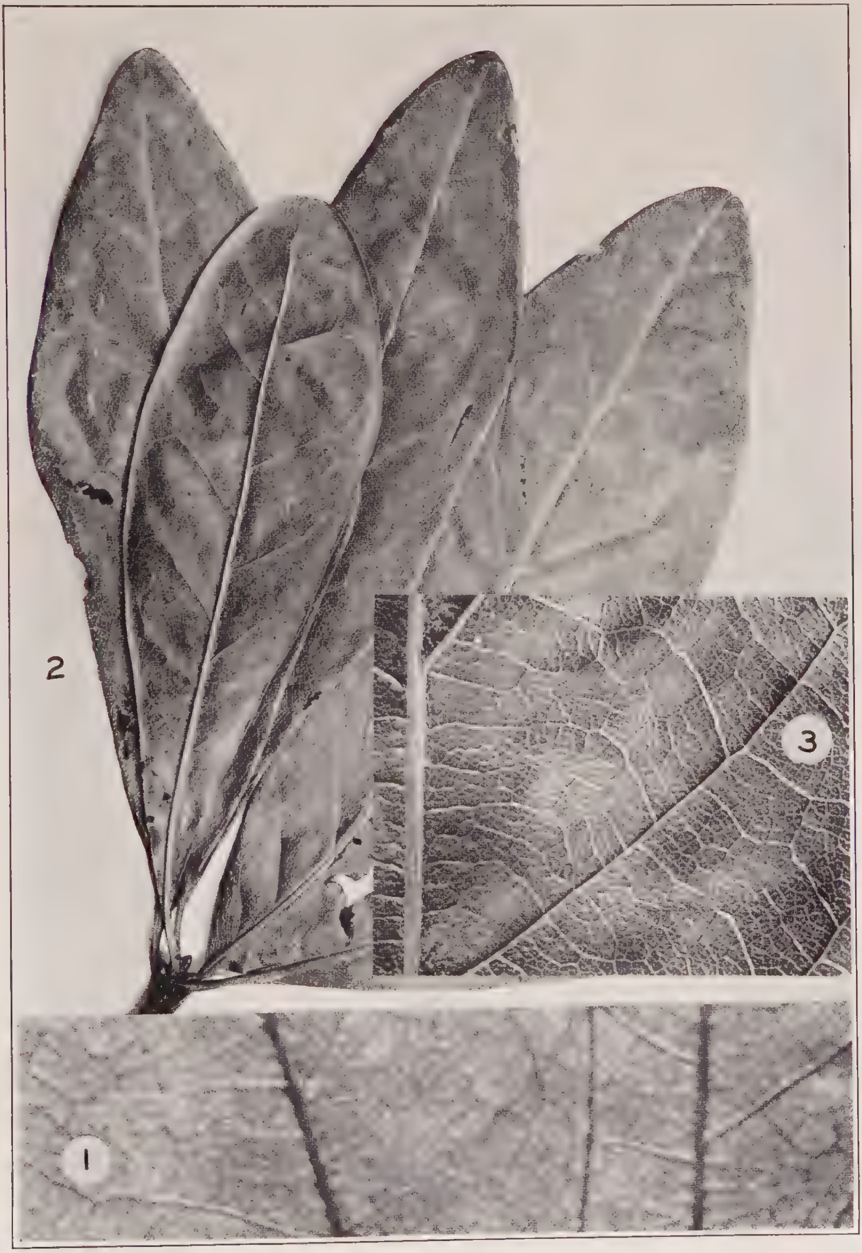

Photo B. G. Schubert

QUERCUS LAURIFOLIA Michx.: FIG. 1, venation of lower leaf-surface, × 3, from photograph of the TYPE by *Cintract;* FIG. 2, foliage, × 1, of type of *Q. rhombica* Sargent; FIG. 3, venation of lower surface of leaf of the latter, × 3.

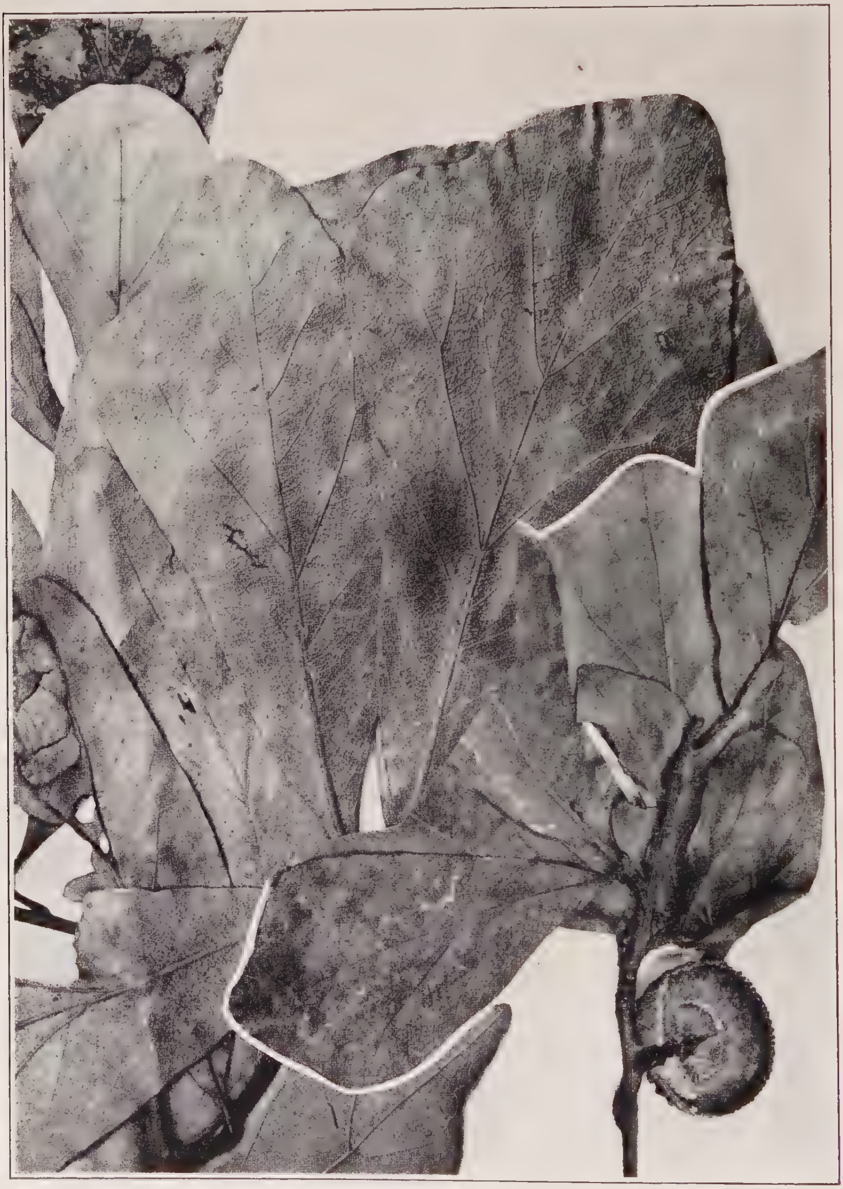

Photo B. G. Schubert

QUERCUS LAURIFOLIA: portions, × 1, of type of *Q. rhombica*, var. *obovatifolia* Sargent.

> *green oak*), et dans un autre endroit, QUERCUS *dentata s. hemisphoerica.* On doit la rapporter à notre Chêne aquatique. *Voyez* BARTRAM *Travels, p.* 14, 28 *et* 320.

Referring to Bartram, p. 14, one finds an account of "Our turkey of America" and nothing about any oak; but on p. 24 (probably intended by Michaux) there is a list of the trees and shrubs "growing on the banks of this sequestered river" which includes the undefined name *Q. dentata.* Page 28 yields, as growing near Savannah, "5. Q. dentata", which in a footnote is explained as "5. Narrow-leaved Wintergreen Oak"; and on p. 320 a long list includes "Quer. dentata, s. hemispherica". The last entry, *Quercus dentata* or *hemispherica*, makes the names alternative and therefore illegitimate, even if they had been accompanied by diagnoses, which they lacked. *Index Kewensis* solved the identity of these two alternative names by stating that one "= aquatica", the other "= nigra". This is one way out of the problem. The usually very cautious Stephen Elliott included in his Sk. Bot. S. C. and Ga. ii. 596 (1824), under *Q. laurifolia* the tree which Willdenow had properly validated as *Q. hemisphaerica,* with "Leaves nearly perennial, sessile, oblong-lanceolate, nearly acute, tapering at base, entire, glabrous on both surfaces"; and he cited in the synonymy *Q. hemispherica* Bartram, and in addition to Michaux's two plates of true *Q. laurifolia* "perhaps also t. 20. f. 2". His more detailed account of the tree with "a large handsome hemispherical head" with leaves "very glabrous on both surfaces . . . , those of the young plant toothed and irregularly sinuate. . . . *Cup* shallow, nearly sessile", was of *Q. hemisphaerica,* rather than of Michaux's *Q. laurifolia.* It is probable that Elliott's misidentification in 1824 set the standard by which later authors have misidentified *Q. laurifolia* of Michaux. Elliott's further remarks are illuminating:

> The figure in Mich. Querc. t. 20. f. 2. exactly resembles the young plants of this species. And as this oak, though growing in dry soils, is more known by the name of "Water Oak," than by any other appellation, it is not impossible that Michaux may have been misled by its popular denomination to insert a figure of it among the real Water Oaks.
>
> I have always considered this as the real Q. Hemisphaerica of Bartram. It certainly is the species to which his [*i. e.* Willdenow's] description most appropriately applies.
>
> Grows in rich sandy soils along the margin of swamps, appearing to take the place of the live oak as you leave the margin of the ocean, but growing also with the live oak on the sea-islands.

I realize that by *Index Kewensis* and by Sargent, Silva, viii. 165 (1895) *Q. hemisphaerica* is reduced, without a word of explanation, to *Q. nigra* L. To be sure, Trelease in his American Oaks, Mem. Nat. Acad. Sci. xx. 160 (1924), speaking of Willdenow's herbarium, said "forms occur as representatives of *Q. hemisphaerica* as he meant to use that name", but that these are the heterophyllous sprouts of several species. Willdenow may have had mixed material (and probably did, just as did Linnaeus for many species) but his diagnosis, "Q. foliis perennantibus oblongo-lanceolatis indivisis trilobis sinuatisque lobis mucronatis utrinque glabris. W.", and his basing of the species on Michaux's interpretation above quoted and Michaux's t. 20, fig. 2, leave no doubt as to what he primarily meant. Trelease's suggestion that *Q. hemisphaerica* might have been sprouts of *Q. nigra* or of *Q. Phellos* does not dispose of Willdenow's definite "foliis perennantibus" nor of the Michaux figure, for both *Q. nigra* and *Q. Phellos* have promptly deciduous leaves.

Sargent and, after him, Trelease, also cite in the synonymy of *Quercus nigra* "*Quercus hemisphaerica*, var. *nana*, Nuttall, Gen. ii. 214 (1818)", although Nuttall had no such variety under *Q. hemisphaerica*. Instead, this is what he said: "11. *hemispherica*, Bartram. Willd. also *Q. aquatica*, Willd. β. *nana*, *Q. nana*, Willd.". Willdenow having published as a species *Q. nana*, Nuttall's *Q. aquatica*, var. *nana* was a new combination (but not under *Q. hemisphaerica*). If we do not take up *Q. hemisphaerica* Bartram ex Willd. for the evergreen or partly evergreen species of the outer Coastal Plain of the South, we must coin a new name. Whoever does that will have some difficulty in demonstrating that André Michaux in 1801, Willdenow in 1805 and Elliott in 1824 were all wrong. There has been trouble enough; no good can come from making more. One whole precious week has been lost in working out these unedifying details. That is enough.

Professor W. C. Coker in Journ. Elisha Mitchell Sci. Soc. xxxii. plates 2–4 (1916) shows some beautiful illustrations of *Quercus hemisphaerica* (as the traditional "*laurifolia*"). The name *hemisphaerica*, when applied to these photographs, seems not to need the restrictive first two syllables. In the trade this tree has become known as "Darlington Oak", because of its early introduction as an evergreen ornamental to the streets of

Darlington, South Carolina. Professor Coker's account of the persistence of the foliage of "one of the handsomest and most ornamental oaks to be found in any country" should be repeated:

> One of the most remarkable qualities of the Laurel Oak is its habit of holding its leaves through the entire year throughout most of its range. Towards its northern limit and when planted outside of the coastal plain this habit is modified to a varying degree, depending on the climate. In the low country of South Carolina and along the gulf to New Orleans the tree is nearly or completely evergreen, but at Darlington and Hartsville, S. C., the leaves fall slowly through the winter, usually beginning at the tips of the branches and proceeding inwards, so that by February or March only the center remains decidedly green, with scattered green leaves in the peripheral parts.—Coker, l. c. 40.

BACK TO CAREX ROSTRATA.—In RHODORA, xliv. 324–331, plates 715 and 716 (1942) I felt it necessary, in following strict priority, to abandon the long-familiar name *Carex rostrata* Stokes (1787) for the earlier *C. inflata* Hudson (1762 in part, emend. 1778). This most unfortunate change of name for one of the most common and generally known *Carices* of cool-temperate regions around the northern hemisphere was induced by the decision of the late A. B. Rendle and James Britten in 1907, that the change was unavoidable. The decision of these usually quite accurate gentlemen, neither of whom understood *Carex*, was further argued and accepted by those most careful students of nomenclature, Schinz & Thellung (1908) and Mansfeld (1938), as well as the less cautious Druce and many others in Europe. There seemed no escape from *C. inflata.*

Now, however, the most accurate of recent British students of *Carex*, Mr. E. Nelmes of Kew, has given a very detailed analysis of Hudson's *C. inflata* in Journ. Bot. lxxx. 109–112 (1942), Hudson's original *C. inflata* of 1762 having been a sad mixture, clarified by his redefinition of it as a single specific element in 1778. Approaching the problem with full understanding of British *Carices*, Nelmes considers every possibility and, most happily, concludes: "From the available evidence it seems to me that *Carex inflata* Huds., *Fl. Angl.*, ed. 1, cannot be identified with any one species: it may be *C. vesicaria* L., or, less likely, *C. rostrata* Stokes, or, least likely, *C. laevigata* Sm.; but it is most likely to represent a mixture. *Carex inflata* Huds., *Fl. Angl.*, ed.

2, is almost certainly *C. laevigata* Sm.". Everyone who knows *Carex* will give a sigh of relief. The four vàrieties recognized by me and illustrated in 1942 should now be called

CAREX ROSTRATA Stokes in Withering, Brit. Pl. ed. 2, ii. 1059 (1787). *C. ampullacea* Gooden. in Trans. Linn. Soc. ii. 207 (1794). *C. inflata* sensu Rendle & Britten in Journ. Bot. xlv. 444 (1907), not Hudson, Fl. Angl. 354 (1762), emend. ed. 2: 412 (1778).

Var. **anticostensis** (Fernald), comb. nov. *C. inflata*, var. *anticostensis* Fernald in RHODORA, xliv. 329, pl. 715, figs. 5 and 6 (1942).

Var. UTRICULATA (Boott) Bailey in Proc. Am. Acad. xxii. 67 (1886). *C. utriculata* Boott in Hook. Fl. Bor.-Am. ii. 221 (1839). *C. utriculata*, var. *minor* Boott, l. c. (1839); and mąny other synonyms cited by me in RHODORA, xlvi. 330 (1942), these including *C. inflata*, var. *utriculata* (Boott) Druce in Bot. Soc. & Exchange Club Brit. Isl. Rep. ix. 141 (1930).

Var. AMBIGENS Fernald in RHODORA, iii. 51 (1901). *C. inflata*, var. *ambigens* (Fernald) Fernald l. c. xliv. 330, pl. 715, figs. 7 and 8 (1942).

LEMNA VALDIVIANA, NOT L. CYCLOSTASA.—Although in his *Revision of the North American Lemnaceae*, printed in advance, Nov. 1, 1897, from the Ninth Ann. Rep. Mo. Bot. Gard. (1898), Dr. C. H. Thompson took up the name *Lemna cyclostasa* for one of the most distinct members of the genus, the authors of Gray, Man. ed. 7 (1908), rejected that name in favor of the validly published *L. valdiviana* Philippi (1864). Had Thompson refrained from precipitate haste to get out his Revision "in Advance" and verified his bibliography it would have been well; for, even now, some authors of volumes on aquatics, in spite of the correction made in ed. 7 of the Manual, still use the name *L. cyclostasa*. Thompson's bibliography was as follows:

> LEMNA CYCLOSTASA (Ell.) Chev. Fl. Par. **2:** 256. 1827. Schleid. Linnaea. **13:** 390. 1839. *Lemna minor* var.? *Cyclostasa* Elliott, Bot. S. Carol. and Ga. **2:** 518. 1824. *L. Valdiviana* Ph. Linnaea. **33:** 239. 1864. *L. Torreyi* Aust. in Gray, Man. Bot. 479. 1867. [5th ed.]. *L. abbreviata* Hglm. Engler's bot. Jahrb. **21**^{3}**:** 298. Jan. 1895.

Had Thompson been less content with the lax and unverified type of bibliography which characterizes so much of the work of his sponsor, Trelease, he would have searched in vain in Chevalier's Flore générale des Environs de Paris for any mention what-

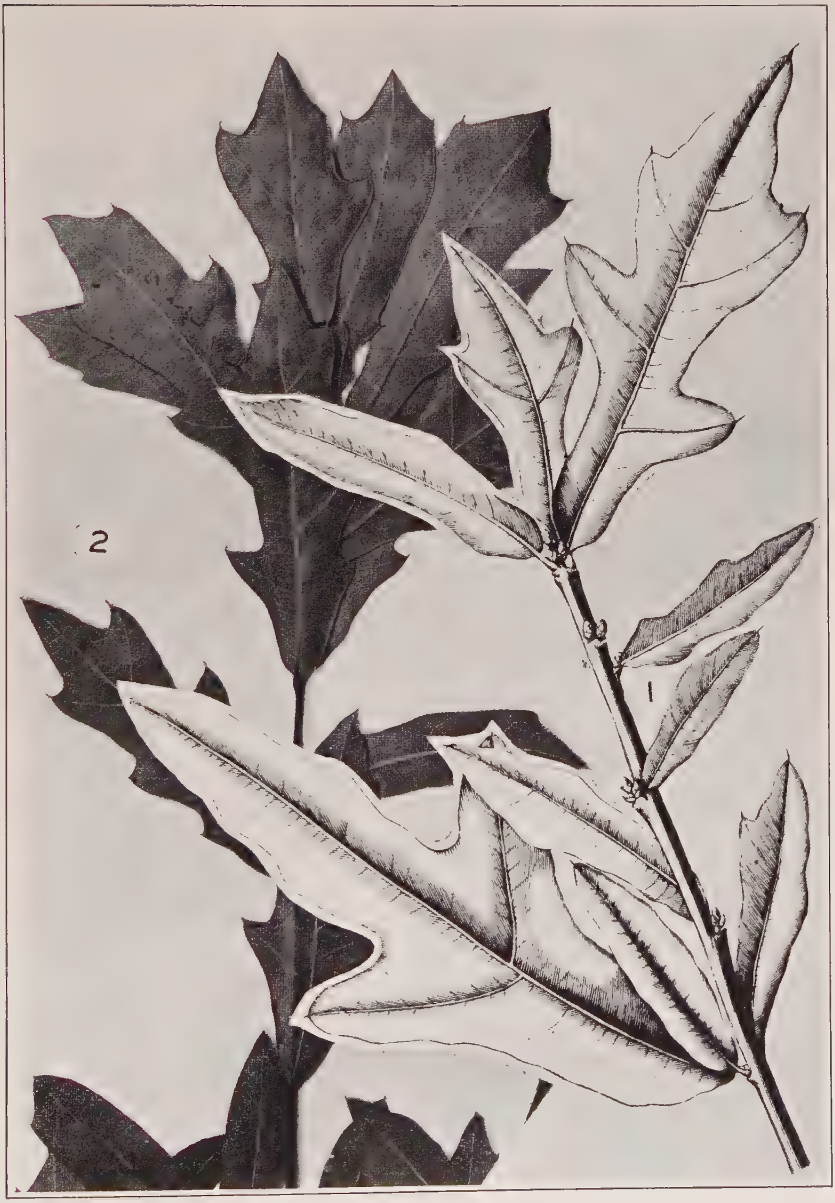

Photo B. G. Schubert

QUERCUS HEMISPHAERICA Bartram ex Willd., both figs. × 1: FIG. 1, the original figure of Michaux, cited by Willdenow; FIG. 2, leaves of young tree of *Q. laurifolia* sensu most authors, not Michaux, from Florida

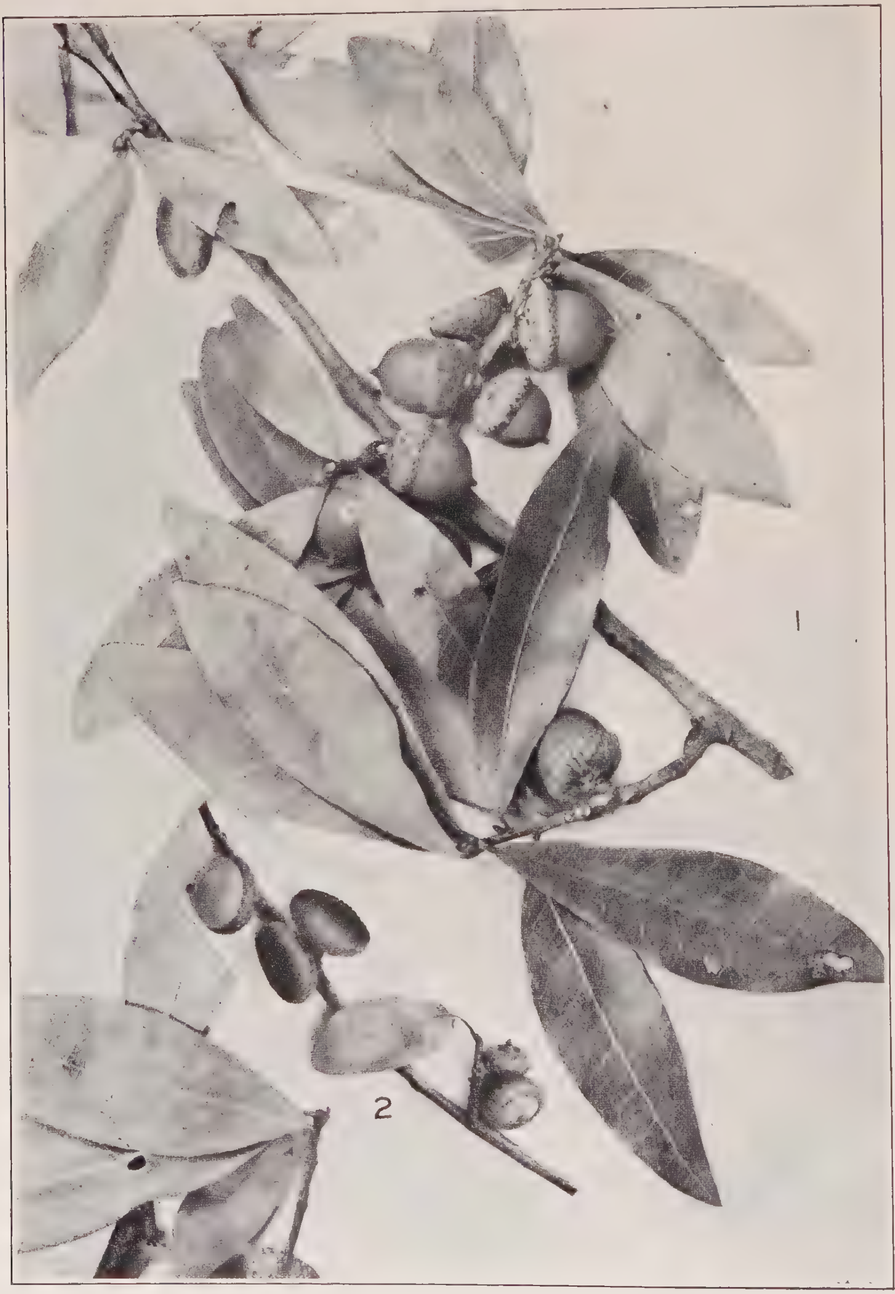

Photo B. G. Schubert

QUERCUS HEMISPHAERICA, both figs. × 1: FIG. 1, fruiting branch from Georgia of *Q. laurifolia* sensu most authors, not Michx.; FIG. 2, cups and acorn from Florida.

ever of *L. cyclostasa*, a species unknown in Europe. Chevalier had the regular European *L. trisulca, polyrrhiza, arhiza, minor* and *gibba* but not *L. cyclostasa* of tropical and warm-temperate America. Had he looked at Schleiden's Monograph of Lemnaceae in Linnaea, xiii. 390 (1839) he would have found under *L. minor* the synonym "L. cyclostasa Elliot". Elliott had no such species but he did describe *L. minor*, var. *? cyclostasa;* Schleiden incorrectly attributed the binomial to him but, since the binomial was published in synonymy, it is invalid. Presumably Thompson copied his references directly from *Index Kewensis*, which gives "cyclostasa, Ell. ex Chev. Fl. Par. ii. 256; Schleid, in Linnaea, viii. (1839) 390=minor". But everyone with much experience knows that the earlier volumes of *Index Kewensis* must be taken as very untrustworthy guides. If anyone can find *L. cyclostasa* in Chevalier, he will make a clarifying discovery; but the reduction by *Index Kewensis* of the species to *L. minor* shows equal lack of understanding. As to Thompson's reference to *L. abbreviata* Hegelm., consultation of his *Systematische Übersicht der Lemnaceen* in Engler's Jahrb. (1895) immediately shows that Hegelmaier was not treating it as a species. Unfortunately, Hegelmaier adopted a misleading method of designating his varieties, by enclosing the specific name and "var." in parentheses, just as in this country there are always some nonconformists, who refuse to follow conventional practices. Hegelmaier gave numbers to all recognized species, "8. **Lemna angolensis** Welw.", "9. **Lemna valdiviana** Philippi", "10. **Lemna minima** Phil.", but under, 9. *L. valdiviana*, he had, without numbers "**Lemna** (**valdiviana** var.) **abbreviata**" and "**Lemna** (**valdiviana** var.?) **platyclados**". *L. valdiviana*, var. *abbreviata* was not intended as a species.

It has seemed important to dissect this case, in view of the faith trustingly reposed in "the books" by those who follow the uncritical American principle of accepting anything they see in print—a method not creditable when extended, as it so regularly is, into scientific bibliography. LEMNA VALDIVIANA Philippi has right-of-way until it is demonstrated that it is antedated by a validly published binomial.

STENANTHIUM IN THE EASTERN UNITED STATES (PLATES 1037–1041).—

STENANTHIUM GRAMINEUM (Ker) Morong, var. **robustum** (S. Watson), stat. nov. *S. robustum* S. Watson in Proc. Am. Acad. xiv. 278 (1879). PLATES 1039 and 1040.

S. GRAMINEUM, var. **micranthum,** var. nov. (TAB. 1041), caule 0.25–1 m. alto, basin versus 1.5–5 mm. diametro; foliis subrigidis corrugatis 0.4–1 cm. latis; perianthiis 3–4.5 (–5) mm. longis.—Upland woods, western Virginia and eastern Tennessee to northwestern Florida and Alabama. TYPE from open woods, Caesar's Head, South Carolina, July 28, 1881, *John Donnell Smith* (Herb. Gray.).

The so-called specific distinctions between *Stenanthium gramineum* and *S. robustum* have proved to be very evasive, Britton in Britton & Brown, Ill. Fl. ed. 2: i. 489 (1913) giving seemingly good differences, his key reading:

"Leaves 2″–3″ wide; capsule reflexed . . . . 1. *S. gramineum.*
Leaves 3″–10″ wide; capsule erect . . . . 2. *S. robustum.*"

In the illustrations, however, these characters are not very definitely shown, the figures showing flowering pedicels spreading in both and no contrast in flowers or fruit, while the comment under *S. robustum* implies lack of full conviction: "Apparently distinct from the preceding species, though closely related". Small, Man. 277 (1933), gives a key which *looks* good:

"Perianth white: capsule deflexed, about 8 mm. long. . . . . 1. *S. gramineum.*
Perianth green: capsule erect, fully 10 mm. long . . . . 2. *S. robustum.*"

In both cases the ranges are given as very extensive, *S. robustum* said by Small to grow in "Acid swamps, various provinces, S[outhern] S[tates] to Ark., Ohio, and Pa.".

When, however, the material of the *Stenanthium* of the eastern United States is even casually studied the keys are found not to unlock the door. The type of *S. gramineum* is *Helonias graminea* Ker in Curtis's Bot. Mag. xxxix. t. 1599 (Nov. 1, 1813), Ker there describing the "*flowers* small, . . . white, suffused with purple on the outside", and very many specimens, otherwise quite like Ker's plate, have the perianth green or bronze to purplish, as well as whitish. Furthermore, Watson's original description of *S. robustum* clearly said "perianth-segments 3 or 4 lines long, white or green". As to the "erect" capsules of the latter, as opposed to "capsule deflexed" in the former, it is not reassuring to one's confidence in the character, to examine a series of *S. robustum* and then one of the usually smaller-flowered *S. gramineum.* Watson seems to have picked out to constitute his *S. robustum* stout and broad-leaved specimens with flowers the largest in the series, these largest plants having "been originally included in the last", the "last" being the more slender and narrower-leaved plants with perianth "2 or 3 lines long" and called by Watson "S. ANGUSTIFOLIUM, Gray", based on *Veratrum angustifolium* Pursh. Pursh had the plant which, shortly before, had been described by Ker as *Helonias graminea,* Pursh not realizing that this plant was later to be distinguished by Small on account of its "Perianth white", for Pursh brazenly wrote "Flowers greenish yellow". Pursh's species came from "high mountains of Virginia and Carolina" and a specimen (with an unpublished name) collected by him and bearing his label "Veratrum [unpublished trivial name somewhat equivalent to *angustifolium*], P. Salt pond mountain", is in his herbarium at the Academy of Natural Sciences of Philadelphia. This, with perianths obviously herbaceous (not white and petaloid), and about 6 mm. long, which may pass as presumably the type, has the capsules nearly erect, not at all "deflexed". Similarly, plants which have the medium-sized perianth and firm narrow leaves of true *S. gramineum* may have the capsules as erect as in theoretically ideal *S. robustum* (PLATE 1039, FIG. 3). Such specimens of *S. gramineum* are shown in PLATE 1037, FIG. 3, from Pisgah Forest, North Carolina, *House,* no. 4040. Others, with the pedicels no more erect than in some Pennsylvanian specimens of *S. robustum* (PLATE 1040, FIG. 3, from New Texas, Lancaster County). Such fruiting racemes are shown in PLATE 1038, this specimen from Springfield, Ohio.

Most unfortunately Watson designated no type for his *Stenanthium robustum* and, still more unfortunately, he left others to find out just what he intended by his species of "Pennsylvania to Ohio, Tennessee and South Carolina." A single sheet only bears his inscription "S. robustum, n. sp." in a delicate pencil-notation easily overlooked. This, PLATE 1039, FIGS. 1 and 2, was from Sligo Furnace, Clarion Co., Pennsylvania, Aug. 1859, *J. R. Lowrie* (distributed by Porter) and must stand as the

TYPE. As will be seen from the photograph, the capsules on the lateral racemes are on almost as divergent pedicels as those of *S. gramineum* (PLATE 1038, FIG. 3). I get little satisfaction out of "Perianth green: capsule erect" as opposed to "Perianth white: capsule deflexed".

Taking the one sheet which Watson marked *S. robustum* as the type, the stout and very leafy stem and the broad leaves, accompanied by perianths 8 or 9 mm. long, set the standard; and it at once becomes apparent that such plants, with bases of stem up to 1.5 cm. thick (as opposed to a maximum of 1 cm.), with larger leaves 1–3 cm. broad (as opposed to 4–15 mm.) have the very smooth and translucent leaves thin or membranaceous and with the very many (up to 61) nerves immersed in the tissue (PLATE 1039, FIGS. 2 and 4, PLATE 1040, FIG. 2). In the usually more southern *S. gramineum* and var. *micranthum*, on the other hand, the firm or coriaceous and mostly narrow leaves have prominent elevated ribs, these giving the upper leaf-surface a closely furrowed or corrugated appearance when dry (PLATE 1037, FIG. 2, PLATE 1038, FIGS. 2 and 6, and PLATE 1041, FIG. 2)[1]. Occasionally plants with all other characters of typical *S. gramineum* (PLATE 1038, FIG. 3) will diverge in foliage, showing thin but narrow leaves (FIG. 4) too strongly approaching those of *S. robustum*. The failure of this last character, so hopefully worked out, leaves nothing absolute to separate the larger-flowered *S. gramineum* and the smaller-flowered *S. robustum* as species.

Turning in the other direction, we find along the mountains from western Virginia and eastern Tennessee southward a series of slender-stemmed and narrow-leaved plants with flowers strikingly smaller than in typical *S. gramineum*. The perianths are either herbaceous or petaloid in texture, sometimes greenish or purplish, sometimes white, and the sepals and petals vary from lance-attenuate to linear-oblong and bluntish. The inflorescence is strongly suggestive of smaller panicles of typical *S. gramineum*. This plant evidently passes through its larger-flowered individuals into the smaller-flowered extreme of *S. gramineum*. I am calling it var. *micranthum* (PLATE 1041).

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[1] These differences stand out sharply, without aid of a hand-lens, through the reading-glasses prescribed after the removal of a cataract. The late K. K. Mackenzie boasted of his "microscopic vision". It is hoped the the present writer will not see what others can not visualize!

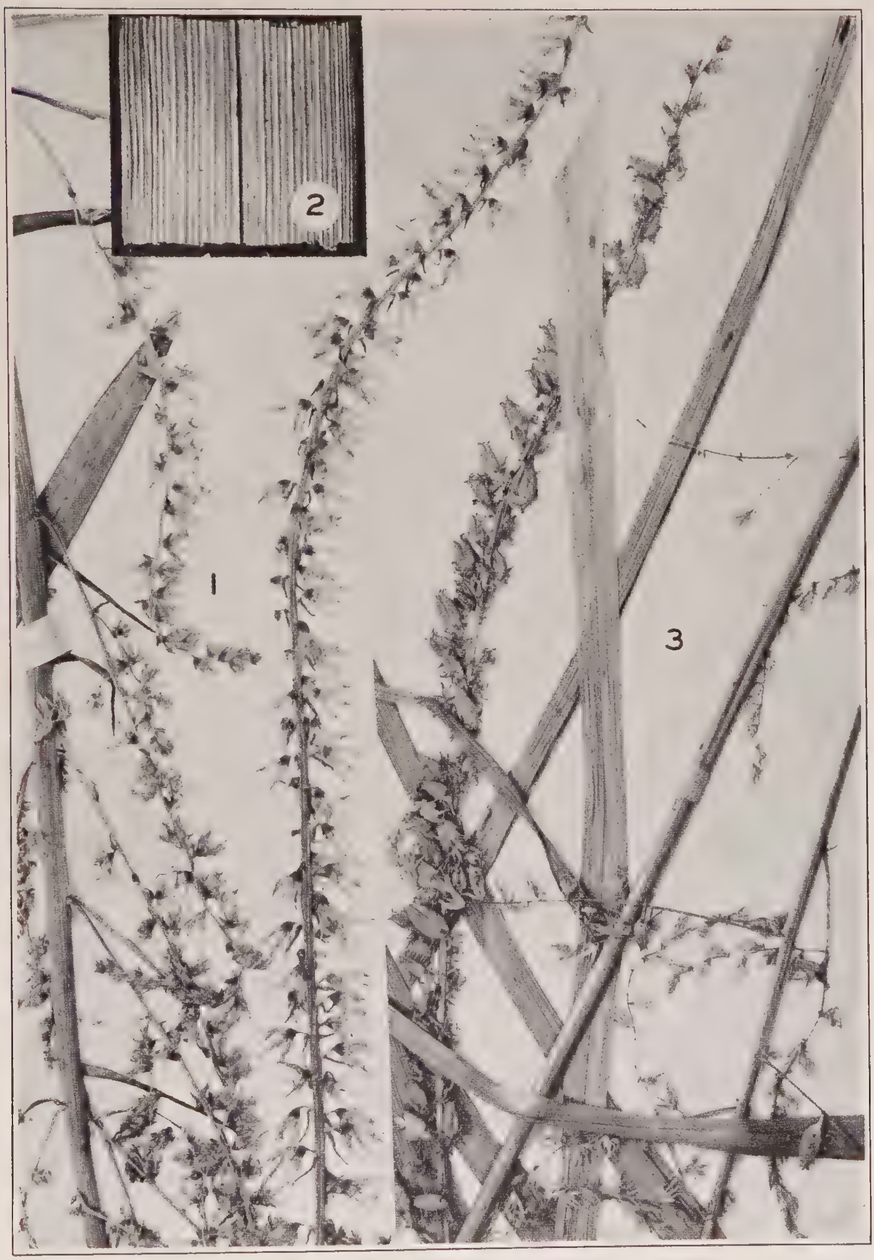


Photo B. G. Schubert

STENANTHIUM GRAMINEUM, var. TYPICUM: FIG. 1, portion of flowering plant, × 1; FIG. 2, portion of leaf, × 2; FIG. 3, portion of fruiting plant, × 1.

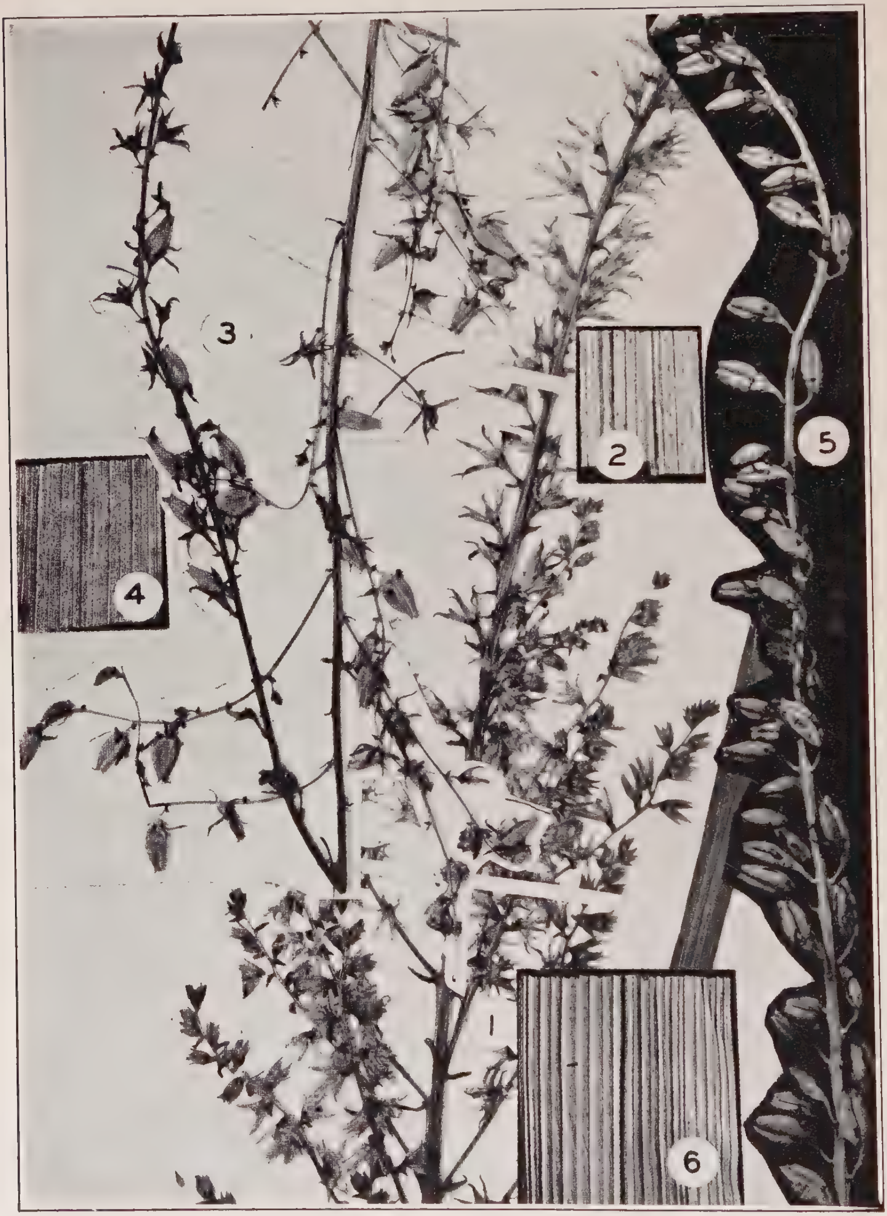


Photo B. G. Schubert

Stenanthium gramineum, var. typicum: fig. 1, portion of inflorescence, × 1; fig. 2, portion of leaf, × 2; fig. 3, portion of fruiting panicle, × 1; fig. 4, portion of leaf, × 2; fig. 5, terminal fruiting raceme, × 1; fig. 6, portion of leaf, × 2.

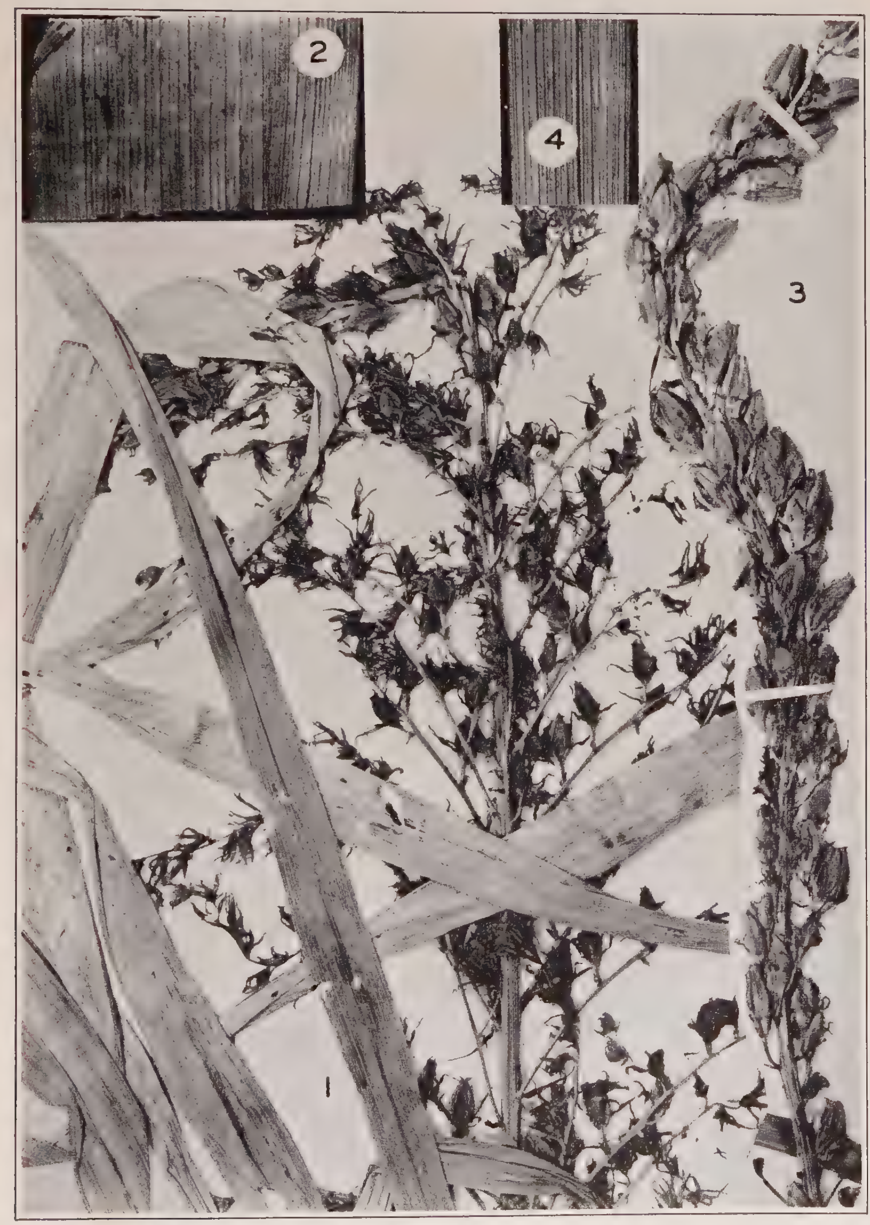


Photo B. G. Schubert

Stenanthium gramineum, var. robustum: fig. 1, portion, × 1, of type of *S. robustum* S. Watson; fig. 2, portion of leaf, × 2, from type; fig. 3, portion of terminal fruiting raceme, × 1; fig. 4, portion of leaf, × 2.

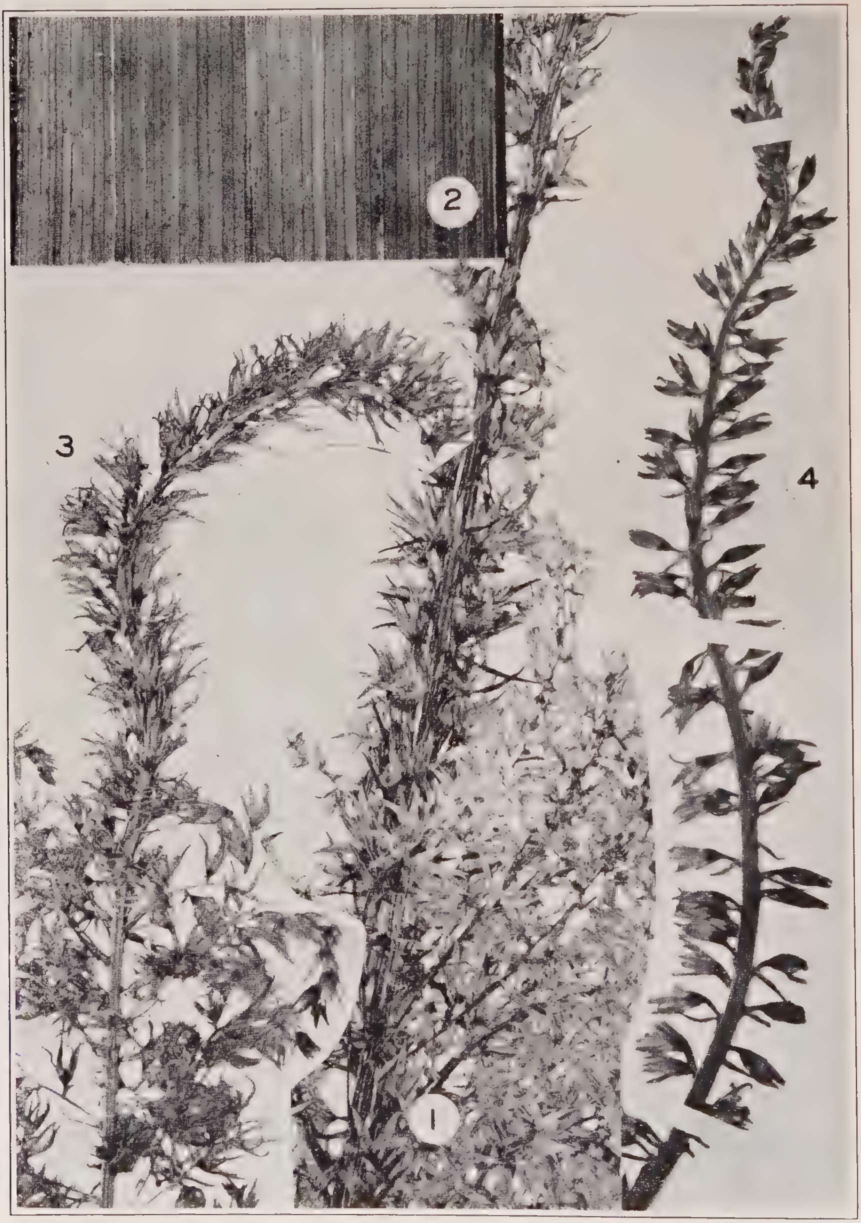


Photo B. G. Schubert

STENANTHIUM GRAMINEUM, var. ROBUSTUM: FIG. 1, portion of inflorescence, × 1; FIG. 2, portion of leaf, × 2; FIG. 3, summit of inflorescence, × 1; FIG. 4, terminal flowering raceme, × 1.

Thus, from the coarse and relatively northern *S. gramineum*, var. *robustum* through the commoner and much wider-ranging true *S. gramineum*, thence on to the tiniest of the series, the southern var. *micranthum*, we have a confluent series, the two most extreme variations with distinctive areas of development. I see no way but to treat them as three geographic varieties. The material in the Gray Herbarium alone suggested three probable species. The large representation in the United States National Herbarium, the herbarium of the Academy of Natural Sciences of Philadelphia, and that of the New York Botanical Garden, for the use of which I am greatly indebted to Drs. Maxon, Pennell and Seaver, respectively, have destroyed all my illusions! As the best I can now do I propose the following definition of the three varieties.

a. Stem (dry) 4–10 mm. thick at lowest exposed internode; leaves rather crowded below, rapidly diminishing below panicle, firm to coriaceous, mostly opaque, the larger ones 4–15 mm. wide, their prominently raised ribs producing a corrugated surface; panicle lax, the branches distant, the flowers mostly subremote along the often flexuous branches; perianth 3–8 (–10) mm. long; capsules ovoid-urceolate, 6–9 mm. long, on spreading to reflexed pedicels; seeds 5–5.5 mm. long.
  Stem 0.5–1.9 cm. high, 4–10 mm. thick at base; perianth 5–10 mm. long . . . . *S. gramineum* var. *typicum*.
  Stem 0.25–1 m. high, 1.5–5 mm. thick at base; perianth 3–4.5 (–5) mm. long . . . . Var. *micranthum*.
a. Stem (dry) 7–15 mm. thick at lowest exposed internode, up to 1.8 m. high; leaves crowded and numerous nearly up to panicle, thin and membranaceous, translucent, the larger ones 1–3 cm. wide, their ribs mostly immersed in the tissue; panicle usually dense, with flowers crowded along the stiffly ascending branches; perianth 5–10 mm. long; capsules oblong-subcylindric, 9–10 mm. long, crowded and ascending to horizontally spreading; seeds 5–8 mm. long . . . . Var. *robustum*.

S. GRAMINEUM (Ker) Morong, var. **typicum.** *S. gramineum* (Ker) Morong in Mem. Torr. Bot. Cl. v. 110 (1894). *Helonias graminea* Ker (Gawler) in Curtis's Bot. Mag. xxxix. t. 1599 (Nov. 1, 1813). *Veratrum angustifolium* Pursh, Fl. Am. Sept. i. 242 (1814). *Xerophyllum gramineum* (Ker) Nutt. Gen. i. 236 (1818). *Veratrum* (subgen. *Stenanthium*) *angustifolium* (Pursh) Gray in Ann. Lyc. N. Y. iv. 120 (1837). *S. angustifolium* (Pursh) Kunth, Enum. iv. 190 (1843). *S. angustifolium*, **S. gramineum* (Ker) Kunth, l. c. (1843).—Rich woods, thickets and borders of bottoms, northwestern Pennsylvania to Illinois and Missouri, south to southeastern Virginia, upland to northwestern

Florida and Alabama, and to Louisiana and eastern Texas. Plates 1037 and 1038.

Var. micranthum Fernald, supra.—Upland woods, western Virginia and eastern Tennessee to northwestern Florida and Alabama. Plate 1041.

Var. robustum (S. Watson) Fernald, supra. *S. robustum* S. Watson in Proc. Am. Acad. iv. 278 (1879).—Southeastern Pennsylvania, Maryland and District of Columbia to Indiana. Plates 1039 and 1040.

The Identity of Sisyrinchium angustifolium (Plates 1042–1044).—In 1865, in the 4th edition of his Manual, Asa Gray recognized one species of *Sisyrinchium* in eastern North America, the all-inclusive *S. Bermudiana* L., with two varieties: var. *anceps* (*S. anceps* Cav.) with "broadly winged scape" and var. *mucronatum* (*S. mucronatum* Michx.) "with slender and narrowly winged scape". By the 6th edition of the Manual Watson (and Coulter), conscious that the continental North American plants are not the restricted *S. Bermudiana* of Bermuda, recognized two species: *S. angustifolium* Mill., with "Scape . . . *simple, the spathe solitary* and terminal", and *S. anceps* Cav. with "Scape . . . usually branching and bearing 2 or more peduncled spathes". Then came Bicknell's amazing revelation that in temperate North America there are very many morphologically and geographically segregated species, although Bicknell went much farther in his splitting than others have been able to follow. Nevertheless, in Atlantic North America Bicknell clearly differentiated at least a score of species which all careful students must recognize. So absorbed, however, was Bicknell in his newly discovered small world that he did not carefully trace to their sources some of the earlier-named plants.

One of his earliest papers, his *Studies in Sisyrinchium—III: S. angustifolium and some related Species new and old,* in Bull. Torr. Bot. Cl. xxvi. 335–349 (1899), started with the basic assumption that the identity of the first segregate from the Linnean all-inclusive *S. Bermudiana* was settled. His *S. "angustifolium* Mill.", with three synonyms (besides *S. Bermudiana* L. in part), *S. gramineum* Lam. (1783), *S. anceps* Cav. (1788) and *S. montanum* Greene (1899), was described as "stiff and erect . . . Leaves . . . 1.5–2.5 mm. wide (1–3.5 mm.) . . . : stems simple and leafless, or occasionally bearing a single leaf subtending 1 or 2 branches . . . , 1–2 mm. or even 3 mm. wide, wing-margined . . . : spathes erect, green or sometimes purplish-tinged; outer bract 2–6 cm. long, surpassing the inner one 1.5–4 cm., rarely less than twice its length, . . . clasping for 2–6 mm. at base . . . ; interior scales silvery white, narrow, usually about half the length of the inner bract: flowers 1–8, violet-blue; perianth 10–12 mm. long; . . . pedicels erect or nearly so, 17–25 mm. long, shorter or slightly longer than the inner bract: capsules 4–6 mm. high, . . . pale, but often clouded with brownish-purple".

Then Bicknell continued: "This species is far more widely distributed than any other one of its genus, ranging from Newfoundland and New Jersey to Saskatchewan and Montana and southward along the eastern mountains to Virginia [only Mountain Lake, 4000 ft. alt. cited] and in the west to southern Colorado". In his introductory paragraph Bicknell had said: "The common Blue-eyed Grass of the eastern states, *Sisyrinchium angustifolium* Miller, may be taken as representative of a section of the genus *Sisyrinchium,* embracing those species having simple leafless stems with terminal spathes . . . the simple-stemmed species are, as a group, of more northern and alpine distribution than those which develop pedunculate spathes from one or more leaf-bearing nodes, while, on the other hand, the species having a definitely compound system of branching are all distinctive southern".

Thus was set up for all of us, who have found it easier to follow the course of least resistance, a standard misconception of what Miller was supposed to have meant by *Sisyrinchium angustifolium,* what Lamarck had as *S. gramineum* and Cavanilles as *S. anceps,* although Miller and Cavanilles had described or shown the spathes as peduncled and all had cited or illustrated plants with peduncles, and with pedicels far from "erect or nearly so, . . . shorter or slightly longer than the inner bract" of Bicknell's *S. "angustifolium"*.

Starting with *Sisyrinchium angustifolium* Miller, Gard. Dict. ed. 8, sp. no. 2 (1768), we get a brief account of a plant cultivated in England, *with peduncles* and small pale blue flowers:

> 2. SISYRINCHIUM (*Angustifolia*) foliis lineari-gladiolatis pedunculis longioribus [than in the preceding *S. Bermudiana*]. *Sisyrinchium with linear sword-shaped leaves, and longer foot-stalks to the flower* [longer than in true *S. Bermudiana*]. Bermudiana graminea, flore minore caeruleo.

> Hort. Elth. 49. *Grass-leaved Bermudiana with a smaller blue flower.*
>
> . . . .
>
> The second sort grows naturally in Virginia; this hath a perennial fibrous root, from which arise many very narrow spear-shaped leaves about three inches long, and scarce an eighth part of an inch broad, of a light green colour, and entire. The stalks rise about three inches high; they are very slender, compressed and bordered like those of the first [*S. Bermudiana*], and have short, narrow, sword-shaped leaves, whose base embrace them; they are terminated by two small pale blue flowers, inclosed in a two-leaved sheath, standing upon longer foot-stalks than those of the other.

The identification by Miller of his *Sisyrinchium angustifolium* with long peduncles and small pale blue flowers on "longer" foot-stalks, with the plant described and illustrated by Dillenius as cultivated in the English gardens in 1732, has real significance, although Bicknell did not note it, just as he apparently did not even read Miller's description in Gard. Dict. ed. 8 (1768), the first place of publication of the binomial *S. angustifolium*. Instead, Bicknell started *S. angustifolium* from the polynomial ed. 7 (1759), where neither the name nor the adjective *angustifolium* is found. Here is what Miller gave in 1759:

> 2. Sisyrinchium *foliis lineari-gladiolatis, pedunculis longioribus. Sisyrinchium* with linear Sword-shaped Leaves, and longer Foot Stalks to the Flower. This is the *Bermudiana graminea, flore minore caeruleo. Hort. Elth.* 49. Grass-leaved *Bermudiana* with a smaller blue Flower.

This nonbinomial account, which alone was cited by Bicknell, was followed by the same statement as in ed. 8, that the plant "grows naturally in *Virginia*", etc.

Now, if we turn to the basic treatment by Dillenius, in his Hortus Elthamensis, 49, t. XLI, fig. 49 (1732) we find his *Bermudiana graminea, flore minore caeruleo* described, not merely as "three inches high", as evidently misquoted by Miller, but up to a foot high: "Planta est palmaris, dodrantalis & pedalis"; the leaves full green ("folia . . . saturanter viridia"); the stem 2-forked ("Caulis . . . in summitate bifariam dividatur"). The plate shows as fig. 48 a plant of true *Sisyrinchium Bermudiana*, with erect and but slightly exserted pedicels, as described by Bicknell for *S. angustifolium* sensu Bickn., not Mill.; and as fig. 49 (our plate 1042, fig. 1) *Bermudiana graminea, flore minore caeruleo*, two plants, the taller 1.6 dm. high and with forked scape, the other with simple scape. Both show narrow sepals and petals

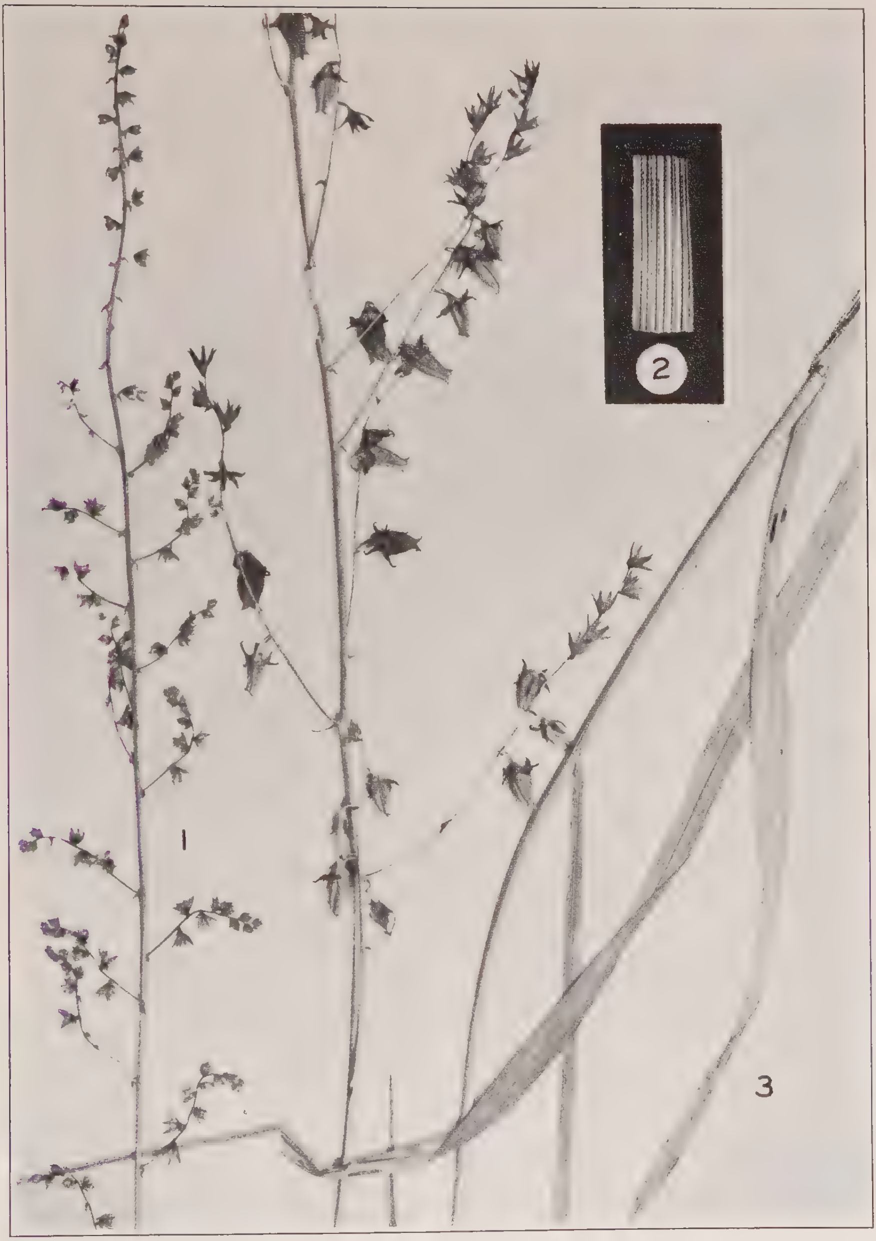
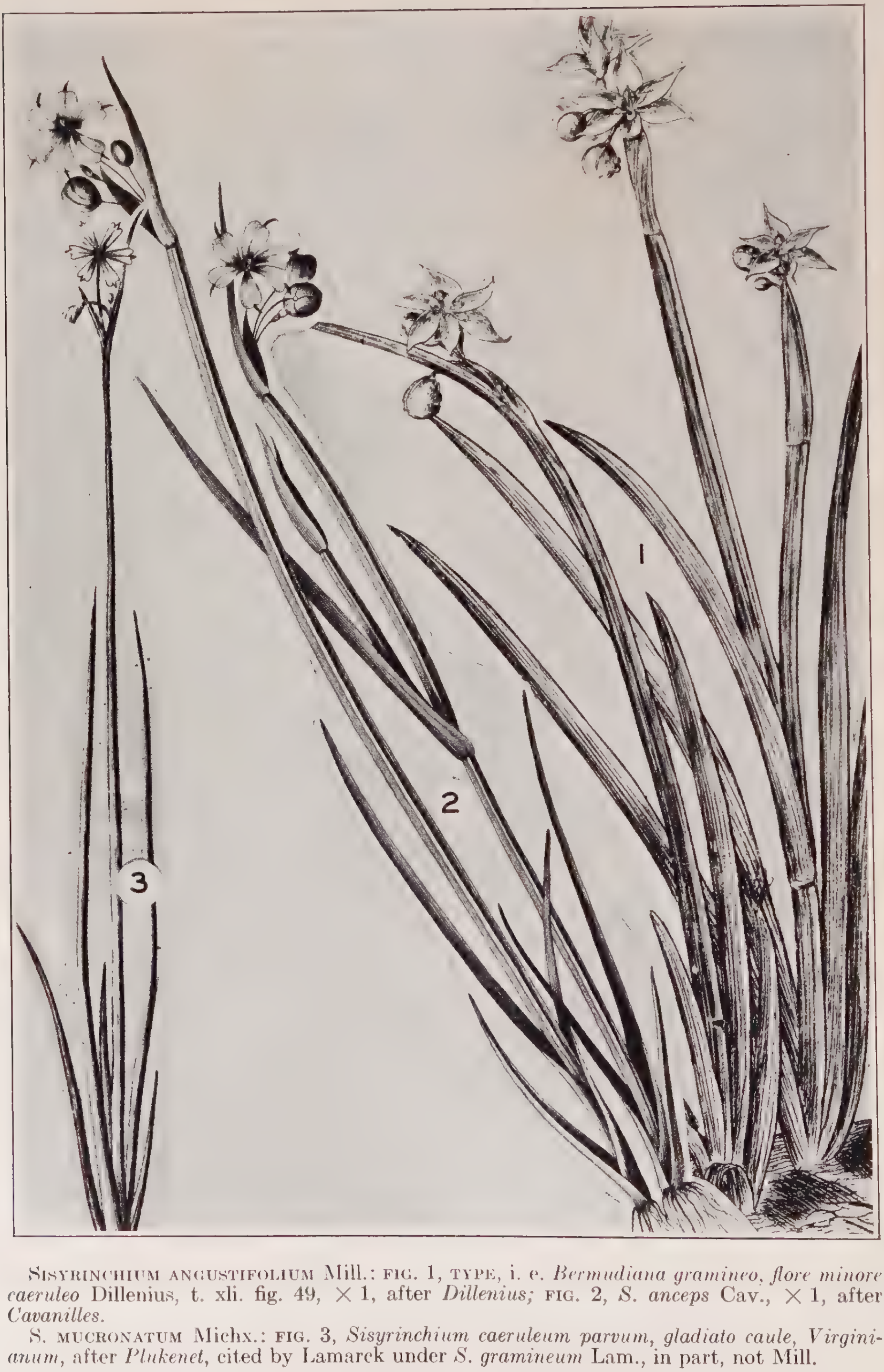


Photo B. G. Schubert

Stenanthium gramineum, var. micranthum: fig. 1, inflorescence, × 1, of type; fig. 2, portion of leaf, × 2; fig. 3, portion of fruiting plant, × 1.



SISYRINCHIUM ANGUSTIFOLIUM Mill.: FIG. 1, TYPE, i. e. *Bermudiana gramineo, flore minore caeruleo* Dillenius, t. xli. fig. 49, × 1, after *Dillenius;* FIG. 2, *S. anceps* Cav., × 1, after *Cavanilles.*

S. MUCRONATUM Michx.: FIG. 3, *Sisyrinchium caeruleum parvum, gladiato caule, Virginianum,* after *Plukenet,* cited by Lamarck under *S. gramineum* Lam., in part, not Mill.

5–10 mm. long and, most important of all, slender fruiting pedicels reflexed or recurving from the spathes, quite as in *S. graminoides* Bicknell, Bull. Torr. Bot. Cl. xxiii. 133, pl. 263 (1896), for Bicknell's plate (our PLATE 1043, FIGS. 1 and 2) shows bifurcate and simple stems from the same base, quite as did that of Dillenius, and 2–4 arched to recurving elongate pedicels, while his description of his *S. graminoides* contains the following items: plant 6 inches to 2 feet high (up to a foot acc. to Dillenius), green or somewhat glaucous (full green acc. to Dillenius); leaves and stem "mostly 1½″–2″ wide" (Dillenius showed them approximately the same, 3–4 mm.); "Stem dividing . . . into two . . . branches. Not infrequently simple and leafless scapes rise among the normally branched ones, simulating the stem of *S. angustifolium*" (Dillenius said "Caulis . . . in summitate bifariam dividatur" but, like Bicknell, showed also a simple stem); "Capsules . . . disposed to be spreading or even recurved on slender pedicels" (Dillenius showed them definitely so), not erect or nearly so as shown in *S. angustifolium* sensu Bicknell (our PLATE 1043, FIG. 3), not Miller.

It is fortunate that Dillenius gave a good illustration of *Sisyrinchium graminoides* Bicknell (as *Bermudiana, flore minore caeruleo*), for in his discussion Dillenius refers to it, as a "figura . . . vitiosa exhibita", the *Sisyrinchium caeruleum parvum gladiato caule Virginianum* of Plukenet, Phyt. t. lxi. fig. 1 (our PLATE 1042, FIG. 3), for the latter figure, although "vitiosa" for the Dillenian species, was a good one of the common Virginian *S. mucronatum* Michx.!, the type of which I studied in 1903 and which is definitely the plant we now know under that name.

Next among the older species included by Bicknell in his usually simple- and winged-stemmed and relatively northern *Sisyrinchium "angustifolium"*, with erect or nearly erect short pedicels is *S. gramineum* Lam. Encycl. i. 408 (1783). Lamarck gave a clear description of a Virginian plant which can hardly be waved aside, as one might be tempted to do, and he also gave as synonyms the conventional *S. Bermudiana* var. α L., which included at least the Dillenian plant, already discussed, and the Plukenet illustration (our PLATE 1042, FIG. 3) of a Virginian plant, which is evidently *S. mucronatum* Michx. (1803). That Lamarck in 1783 had before him a really new species is possible, from his description. That it was the plant of Plukenet's t. 61, fig. 1 is seemingly apparent and that it was the characteristic plant, common at least in eastern Virginia, which in 1803 Michaux described from Pennsylvania as *S. mucronatum* seems possible from Lamarck's very clear description:

> 1. BERMUDIENNE graminée, *Sisyrinchium gramineum. Sisyrinchium caule simplici alato, spathis inaequalissimis flores superantibus.* N. *Sisyrinchium angustifolium.* Mill. Dict. n°. 2. *Sisyrinchium caeruleum parvum, gladiato caule, Virginianum.* Pluk. Alm. 348. t. 61. f. I. *Bermudiana graminea, flore minore caeruleo.* Dill. Elth. 49. t. 41. f. 49. *Sisyrinchium Bermudiana.* Lin. var. *a.*
>
> Les feuilles de cette plante sont très-étroites, linéaires, graminées, lisses ou sans nervures bien remarquables, & s'engaînent à leur base par le côté, comme celles des Iris: les tiges sont presque filiformes, simples pour l'ordinaire, comprimées, bordées dans leur longueur de deux petites aîles ou membranes courantes, & hautes de six ou sept pouces. Chaque tige est terminée par deux écailles spathacées, fort inégales, l'extérieure étant une fois plus longue que l'autre, & dépassant toujours les fleurs, qui sont petites, bleuâtres, & communément au nombre de deux. Cette plante croît naturellement dans la Virginie; on la cultive au Jardin du Roi. ♃. (*v. v.*)

In Virginia the only species of *Sisyrinchium* known with consistently unforking stems are *S. "angustifolium"* sensu Bicknell, already somewhat discussed, and in Virginia definitely montane; *S. mucronatum* Michx., frequent; and the southern and capillary-leaved *S. capillare* Bicknell, a very rare and very distinct species with paired sessile spathes, of flat pineland or bog of the Coastal Plain, only twice found in the southeasternmost counties. That *S. gramineum* of Lamarck could have been *S. mucronatum* is evident from the slender ("almost filiform") stems bordered by 2 little wings; whereas, if it were *S. "angustifolium"* sensu Bicknell, which is less likely to have reached the Jardin du Roi from Virginia, we should expect less emphasis on the slenderness. Whether Lamarck had either of these becomes, perhaps fortunately, unimportant, since he cited as an unquestioned synonym *S. angustifolium* Mill. Dict. no. 2. By the International Rules Lamarck's *S. gramineum* is, therefore, illegitimate because (Art. 60[1]) "there was a valid name for the group to which it was applied, with its particular circumscription, position and rank". Thus the identity of the plant actually described by Lamarck becomes an academic question only. S. MUCRONATUM Michx., published without entangling bibliography, stands.

Returning to Bicknell's enumeration of supposed synonyms of his *S. "angustifolium"* we next come to *S. anceps* Cav. Diss. vi. 345, t. cxc, fig. 2 (1788), and we almost repeat the story. This plant (our PLATE 1042, FIG. 2), *"Habitat in Virginia"*, described "Caule simplici ancipite saepius aphyllo", was shown as either simple or with a fork at the axil of the cauline leaf, just as in the Dillenian plate of *S. angustifolium* and in Bicknell's plate (our PLATE 1043, FIGS 1 and 2) of his *S. graminoides*, while the long-exserted pedicels are too suggestive of Bicknell's illustration of his *S. graminoides*. Here, then, is the same old plant of European gardens, *S. angustifolium* Mill. (not sensu Bicknell) and, to cap the climax, Cavanilles calmly gave as the same as his reputedly new *S. anceps* the following synonyms: *S. Bermudiana* var. α L.; *S. gramineum* Lam.; *S. angustifolium* Mill., the pre-Linnean *S. caeruleum parvum, gladiato caule, virginianum* of Plukenet, Alm. 348, t. 61, fig. 1, and the much discussed *Bermudiana graminea, flore minore coeruleo* of Dillenius. Then, for full measure, Cavanilles added a new synonym: "S. Minus. R. H. P. [Roy. Hort. Paris, *i. e.* Jardin du Roi, whence Lamarck got his material of *S. gramineum*]". Thus, *S. anceps* started off with all the previously published names for the North American plants encumbering it; and by the same Rule which invalidates the name *S. gramineum* Lam. the name *S. anceps* is also illegitimate.

The last name cited by Bicknell as synonymous with his *Sisyrinchium "angustifolium"* is *S. montanum* Greene, Pittonia, iv. 33 (1899), described from the mountains of Colorado. Here, at last, is a resting-place for the commonest and most widespread species of the genus in Canada and the Northern States, but, even so, the common plant of the East and Northeast cannot really rest. Most of the Northeastern plants have the leaves and stem full green, the green or purple-suffused capsules becoming dull brown or greenish-purple, when ripe changing to almost blackish (PLATE 1044, FIG. 3). Greene's *S. montanum*, an ISOTYPE shown in our PLATE 1044, FIGS. 1 and 2, is pale or whitish-green, with the capsules whitish-brown or pale-stramineous. In the East it occurs along the limy valleys of the Gaspé Peninsula and Anticosti; it is also in western New York, along the Ottawa River, on the limestone of Bruce Peninsula and in northern Michigan and Minnesota. So far as I can find there is no published name for the common deeper green and darker-fruited and not prevailingly calcicolous eastern plant.

To summarize, the species of SISYRINCHIUM here specially discussed are

SISYRINCHIUM ANGUSTIFOLIUM Mill. Dict. ed. 8, 2 (1768), based largely, if not wholly on *Bermudiana graminea, flore minore caeruleo* Dill. Hort. Elth. 49, t. XLI, fig. 49 (1732). *S. Bermudiana* L. Sp. Pl. 954 (1753) at least as to citation of Dillenius. *S. foliis lineari-gladiolatis, pedunculis longioribus* Mill. Gard. Dict. ed. 7, no. 2 (1759). *S. gramineum* Lam. Encycl. i. 408 (1783) in part. *S. anceps* Cav. Diss. vi. 345, t. cxc, fig. 2 (1788). *Ferraria pulchella* Salisb. Prodr. 42 (1796), in part, as based on *S. anceps* Cav. (illegitimate substitute). *S. graminoides* Bicknell in Bull. Torr. Bot. Cl. xxiii. 133, plate 263 (1896). Our PLATES 1042, FIGS. 1 and 2, and 1043, FIGS. 1 and 2.

S. MONTANUM Greene, Pittonia, iv. 33 (1899). PLATE 1044, FIGS. 1 and 2. *S. angustifolium* sensu Bicknell in Bull. Torr. Bot. Cl. xxvi. 336 (1899), in part only. *S. septentrionale* Bicknell in Bull. Torr. Bot. Cl. xxvi. 452 (1899), the slenderest extreme.—Plant pale green, not much if at all darkened in drying; capsules whitish-brown or pale-stramineous, not becoming blackish in age.—Calcareous and other mountains and river-gravels and openings, western Newfoundland to Mackenzie and northern British Columbia, south to Anticosti Island and Gaspé Peninsula, Quebec, southern Ontario, western New York, Michigan, northern Indiana, northern Illinois, Iowa, Nebraska, Colorado, Utah and southern British Columbia. All material I have seen from Michigan and Manitoba northwestward and westward belongs here. Characteristic eastern specimens (selected from a larger series) are: NEWFOUNDLAND: dry limy barrens, upper slopes and tablelands, alt. 200–300 m., Table Mountain, Port-au-Port Bay, *Fernald & Wiegand*, no. 4252, *Fernald & St. John*, no. 10,814 (both as *S. septentrionale*). QUEBEC: Anticosti I., graviers calcaires, many colls., from *Victorin & Rolland-Germain* (some of them with *Louis-Marie*): no. 20,333 (Rivière Vaureal), 20,334 (R. au Saumon), 20,335 (R. à la Patate), 24,233 (R. Jupiter), 24,234 and 27,108 (Pointe Sud-Ouest), 27,109 (R. Chicotte), 27,110 (R. Dauphine), 27,111 (R. Natiskotek), 27,112 (R. McKane), 27,113 (R. du Brick); alluvium, banks of Grand River, Gaspé Co., June 30–July 3, 1904, *Fernald;* alluvial thicket between the Forks and Brulé Brook, Little Cascapedia River, Bonaventure Co., July 29 and 30, 1904, *Collins, Fernald & Pease* (*Pease*, no. 4971); alluvium of Little Cascapedia R., *Collins & Fernald*, no. 56; Rivière Petite Cascapedia, *Victorin, Rolland & Jacques*, no. 33,781; alluvium, Grand Cascapedia River, July 12–15, 1905,

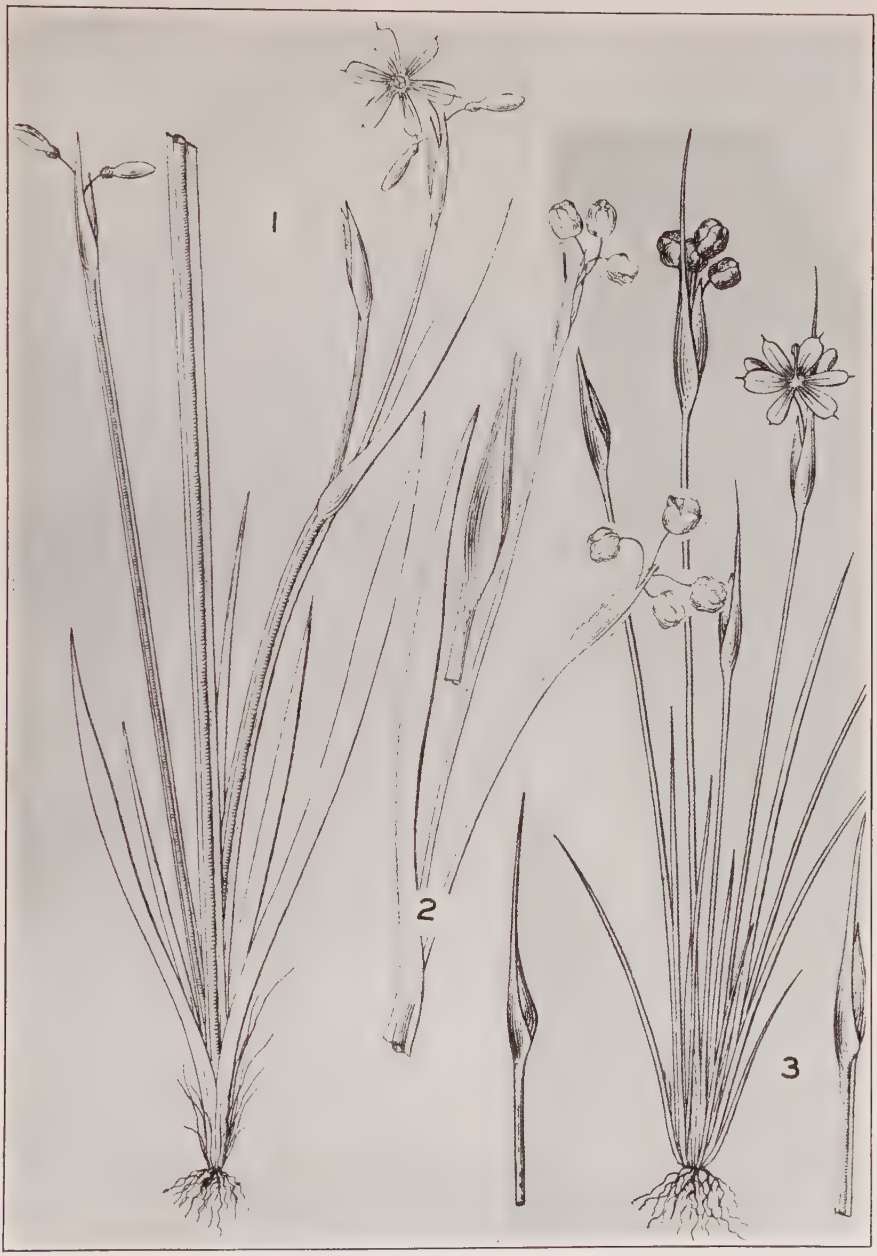


Photo B. G. Schubert

Sisyrinchium angustifolium Mill.: figs. 1 and 2, portions of Bicknell's illustrations of *S. graminoides* Bicknell.
S. montanum, var. crebrum: fig. 3, reduced from Bicknell's illustration of *S. angustifolium* sensu Bicknell, not Mill.

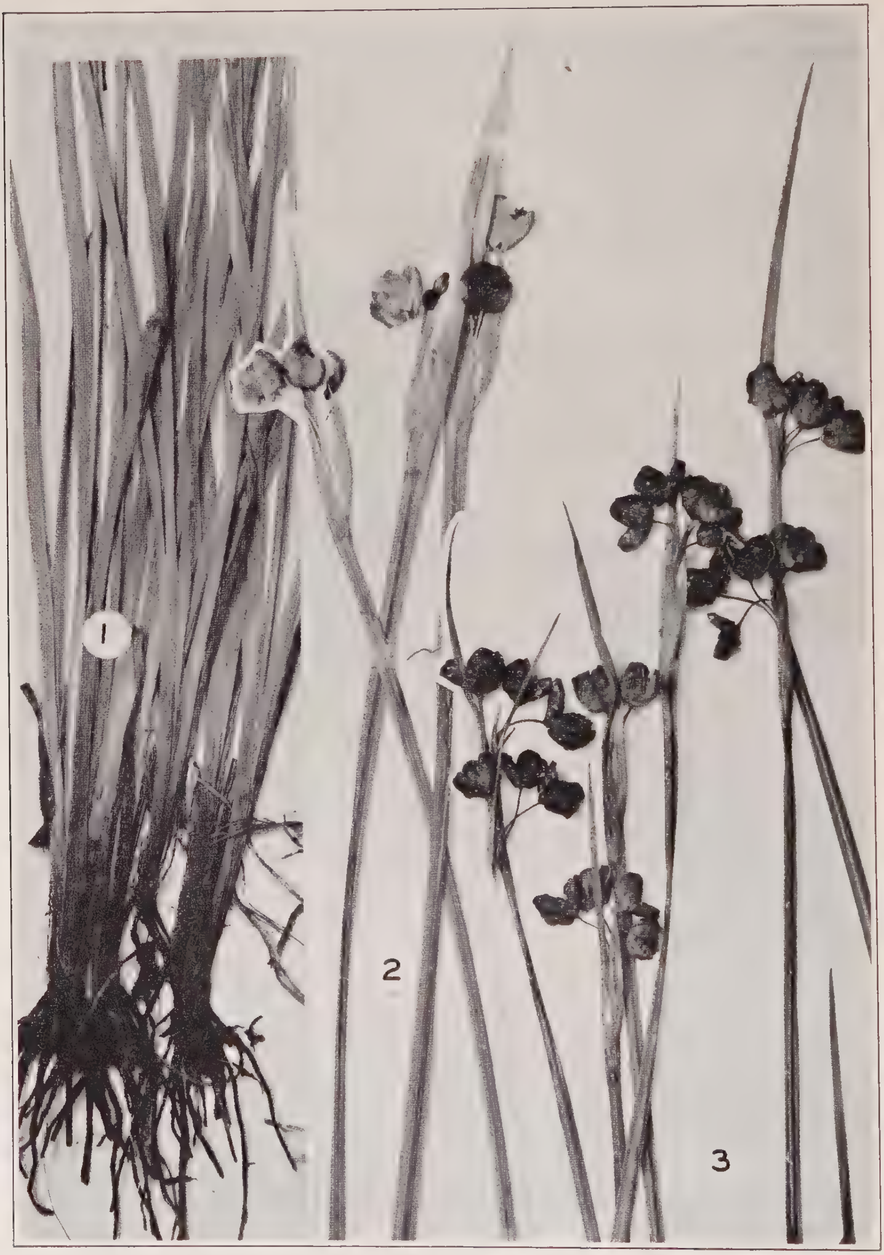


Photo B. G. Schubert

SISYRINCHIUM MONTANUM Greene: FIG. 1, portion, × 1, of ISOTYPE.
S. MONTANUM, var. CREBRUM Fernald: FIG. 2, fruiting portions, × 1, of TYPE.

Williams, Collins & Fernald; alluvium of Bonaventure River, Bonaventure Co., Aug. 5; 6 and 8, 1904, *Collins, Fernald & Pease* (*Pease*, no. 5780); gravelly beach, Carleton Point, Carleton, July 21, 1904, *Collins & Fernald;* dry calcareous sand back of beach, Tracadigash Point, Carleton, *Fernald & Weatherby*, no. 2426; sur le barachois, Carleton, *Victorin, Rolland & Jacques*, no. 33,576; Chicoutimi, Saguenay River, Aug. 3, 1892, *Kennedy*. NEW YORK: low field 2½ miles northwest of Waterloo, Seneca Co., *Wiegand, Eames & Randolph*, no. 11,801; low meadow, Victor, Ontario Co., *House*, no. 17,489. ONTARIO: east of Davis Swamp, Ottawa, *J. Macoun*, no. 86,675; Casselman, *J. Macoun*, no. 4387, crevices and talus of hornblendic cliffs and ledges, Cloche Peninsula, Manitoulin Distr., *Fernald & Pease*, no. 3244; dry limestone flats, Cloche Peninsula, *Fassett*, no. 14,570; Hay Bay, Tobemory, Bruce Peninsula, *Krotkov*, no. 7281; open glade, Jack Fish, Thunder Bay Distr., *Pease & Bean*, no. 23,547; Sleeping Giant, Thunder Bay Distr., *Taylor, Losee & Bannan*, no. 915.

S. MONTANUM, var. **crebrum,** var. nov. (TAB. 1044, FIG. 3) foliis saturante viridibus; capsulis viridibus vel purpurascentibus deinde plus minusve atrobrunneis.—Foliage and stem deep green, drying dark or blackish; capsules green or purple-tinged, in age fuscous-brown or blackish.—Southwestern Greenland; Newfoundland to Ontario, south to Nova Scotia, New England and Pennsylvania, and mts. to western Virginia (according to Bicknell). TYPE from Clark's Point, Southwest Harbor, Maine, August 17, 1890, *Edward L. Rand* (in Herb. Gray.).

In addition to the type the following, from twenty times as many sheets, are cited as characteristic. GREENLAND: Nünatàrssüak, 65° 25′ N., 49° 50′ W., August, 1932, *J. Iversen*. NEWFOUNDLAND: by rill on steep siliceous slope of Joan Plains Hill, Bay Bulls, *Fernald, Long & Dunbar*, no. 26,528; dry soil in fields, near Topsail, Conception Bay, *Howe & Lang*, no. 1219; Glenwood, *Fernald & Wiegand*, nos. 5196 and 5198; dry burned crests north and east of Tilt Cove, *F. & W.*, no. 5199; Grand Falls, *F. & W.*, no. 5195; Port Saunders, *F. & W.*, no. 3094; Cow Head, *F. & W.*, no. 3091; river-gravel, mouth of McKenzie River, Bonne Bay, *Fernald, Long & Fogg*, no. 1531; Lark Harbor, *F. L. & F.*, no. 188. QUEBEC: Natashquan, *St. John*, no. 90,327, *Victorin & Rolland*, no. 28,543; Cap de l'Est, Anticosti, *Victorin & Rolland*, no. 27,105; graviers de platières, Rivière la Loutre, *Victorin & Rolland*, no. 24,235; La Madeleine, Gaspé Co., *Rousseau*, no. 31,099; Mont-Saint-Pierre, Gaspé Co., *Victorin, Rolland & Jacques*, no. 33,229; peaty headland, Cap au Renard, Gaspé Co., *Fernald & Pease*, no. 24,968; Isle-aux-Courdes, *Victorin*, no. 4192; Lac St.-Jean, *Victorin*, no. 15,957; Ile-aux-Basques, Co. de Temiscouata, *Victorin, Rolland & Jacques*, no.

33,042; sable, nord de Mont-Laurier, Senneterre, *Victorin, Rolland & Dominique*, no. 204. Magdalen Islands: dry sandy field, Wolf Island (Pointe du Loup), *Fernald, Bartram & Long*, no. 7214. Prince Edward Island: dry clearings, Alberton, *Fernald & St. John*, no. 7213. New Brunswick: dry gravel-pavement, Belledune Point, *Fernald & Pease*, no. 24,969; sandy shore, Bathurst, *S. F. Blake*, no. 5387; damp place in field, Deep Cove, Grand Manan, *C. A. & Una F. Weatherby*, no. 5530. Nova Scotia: Barrasois River, Cape Breton, *G. E. Nichols*, no. 611; gravelly beach, Guysborough, *Rousseau*, no. 35,352; gravelly beach of Third Lake, Windsor Junction, *Fernald & Long*, no. 20,806; seepy banks and moist fields, Yarmouth, *Bissell, Pease, Long & Linder*, no. 20,793. Maine: dry fields, Blaine, *Fernald*, no. 2493; Peaked Mt., Clifton, Aug. 22, 1897, *Fernald;* roadside, Newry, *Pease*, no. 28,376; dry pasture, Roque Bluffs, Aug. 1, 1911, *C. H. Knowlton;* boggy meadow, Harriman Point, Brooklin, *A. F. Hill*, no. 1347; old orchard, Lincolnville, *G. B. Rossbach*, no. 148; Blackstrap Hill, Falmouth, *Bissell & Chamberlain*, no. 373; York Harbor, Aug. 25, 1896, *Bicknell.* New Hampshire: dry pasture, Martin Location, Coös Co., *Pease*, no. 14,251; Durham, *Hodgdon*, no. 4000; Hookset, June 7, 1921, *C. F. Batchelder.* Vermont: field, Concord, Essex Co., *Pease*, no. 28,576; Wells River, *Pease*, no. 29,462; sand plain, Swanton, *S. F. Blake*, no. 3153; Manchester, *M. A. Day*, no. 171. Massachusetts: Essex, June 13, 1896, *E. F. Williams;* Groton, *Harris & Smith*, no. 2678; Boxborough, *Hubbard & Torrey*, no. T521; wet field, Stoughton, June 2, 1909, *Kennedy;* Plymouth, *Fernald & Hunnewell*, no. 15,083; dry sandy oak barrens, Harwich, *Fernald*, no. 16,601; South Ashburnham, *F. F. Forbes*, no. 1085; dry gravelly bank, Ashfield, June 19, 1921, *Churchill et al.;* dry open soil, Middlefield, *Fernald & Long*, no. 9262. Rhode Island: Cumberland, May 30, 1911, *R. A. Ware;* Middletown, May 30, 1908, *E. F. Williams;* Block Island, June 16, 1917, *R. P. Marshall.* Connecticut: dry field, Franklin, May 31, 1906, *Woodward;* moist field, South Britain, *Blewitt*, no. 624; wet meadow, Waterbury, *Blewitt*, no. 567; dry hill, Southington, *L. Andrews*, no. 489; Oxford, June 8, 1902, *Harger;* meadows, Stratford, June 5, 1898, *Eames.* New York: moist open field, Madrid, *Phelps*, no. 340; Canton, *Phelps*, no. 108; Fort Ann, July 15, 1917, *Burnham;* Oneida Castle, *Maxon*, no. 152; Caroline, *Eames & MacDaniels*, no. 3801; Dryden, *F. P. Metcalf*, no. 2025. Pennsylvania: wooded roadside, Muncy Valley, Sullivan Co., *Fosberg*, no. 15,036; grass-flat in open woods, Leroy, Bradford Co., June 21, 1941, *W. F. Westerfeld.* Ontario: dry clearing, Temagami Forest, *W. R. Watson*, no. 6701; open field, Central Island, Toronto, June 18, 1936, *R. J. Eaton;* crevices of sandstone, Corbeil Point, Algoma Distr., *T. M. C. Taylor et al.*, no. 705.

Some Orchids of the Manual Range (Plates 1045–1048).—

Habenaria clavellata (Michx.) Spreng., var. **ophioglossoides,** var. nov. (tab. 1046), a var. typica recedit folio infimo sessile, vix basi prolongato, ovale vel oblongo vel late oblanceolato 1–4 cm. lato, 3–17 cm. longo, longitudine bis vel etiam sexies majore quam latitudine.—Newfoundland and Côte Nord, Que., to western Ontario, south to Nova Scotia, New England, New Jersey, Michigan and northern Wisconsin. Type from Nova Scotia: boggy clearing near Porcupine Lake, Arcadia, Yarmouth Co., Sept. 2, 1920, *Fernald & Long*, no. 20,839 (in Herb. Gray.; isotype in Herb. Phil. Acad.).

Typical *Habenaria clavellata* was based on *Orchis clavellata* Michx. Fl. Bor.-Am. ii. 155 (1803) from Carolina. As shown by the Michaux type (our plate 1045, fig. 1), which, unfortunately, has the tip of the backward-folded leaf covered by the label, he had the characteristic Carolinian and broadly southern plant with the relatively narrow leaf tapering to a subpetiolar base, a full-length leaf from North Carolina shown as fig. 2. Typical *H. clavellata* has the single large leaf narrowly oblong, oblanceolate or spatulate, gradually tapering to a rather definite petiolar base, the leaf varying from 5.5 to 23 cm. long and 0.7–2.7 cm. broad (one twelfth to one fifth as broad as long). All material in the Gray Herbarium from Florida westward to Louisiana and northward to Virginia and Tennessee is typical *H. clavellata*, while this extreme of the species pushes locally northward into the southern area of var. *ophioglossoides*.

The latter, var. *ophioglossoides*, has oval, oblong or broadly oblanceolate leaves rounded to tapering to an essentially sessile (not subpetiolar) base, the blade 3–17 cm. long and 1–4 cm. broad (one sixth to one half as broad as long). It is, as a series, more northern than typical *H. clavellata*, its dominance in the North indicated in the following check of specimens in the Gray Herbarium and that of the New England Botanical Club: from Newfoundland, typical *H. clavellata* 0, var. *ophioglossoides*, 21; Quebec, typical *clav.* 0, var. *oph.* 8; Prince Edward Island, typical *clav.* 0, var. *oph.* 4; New Brunswick, typical *clav.* 0, transition 1, var. *oph.* 7; Nova Scotia, typical *clav.* 0, transition 1, var. *oph.* 23; Maine, typical *clav.* 0, transition 6, var. *oph.* 75; New Hampshire, typical *clav.* and transition 8, var. *oph.* 42; Vermont, typical *clav.* and transition 1, var. *oph.* 12; Massachusetts, typical *clav.* and transition 41, var. *oph.* 17; Rhode Island, typical *clav.* 7, var. *oph.* 1; Connecticut, typical *clav.* 6, var. *oph.* 0; New York, typical *clav.* 8, var. *oph.* 5; Ontario, typical *clav.* 0, var. *oph.* 6; Michigan, typical *clav.* 0, var. *oph.* 6. Too little material is at hand from New Jersey, Pennsylvania and Ohio to Minnesota and Iowa to indicate the relative frequency of the two in those states; but the strong development southward of typical *H. clavellata* and northeastward of var. *ophioglossoides* is clear.

From the citation in Ames, Enum. Orchids U. S. and Canada, 44 (1924) one would infer that, in publishing the basic *Orchis clavellata,* Michaux assigned it earlier synonyms which might render his later name (of 1803) untenable. The first citation in the Enumeration, under synonymy of *H. clavellata* reads: "Orchis clavellata *Michaux,* Flora Boreali-americana, vol. 2, p. 155 (1803), exclude synonymy in part." Reference to Michaux's treatment shows, however, merely the description of the new species, with "*Hab.* in Carolina."[1] As originally published *Orchis clavellata* had no synonymy, so that the validity of the name is unblemished.

Orchis tridentata Muhl. ex Willd. Sp. Pl. iv. 41 (1805) from Pennsylvania, with "Folia *caulina tria, infimum lanceolato-ensiforme dodrantale*" must be the typical relatively southern *Habenaria clavellata,* for the very narrow leaf "nine inches long" can apply only to that, and the material from Lancaster County before me is of typical *H. clavellata.*

(*To be continued*)

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[1] Michaux's Flora Boreali-Americana was based on his own collections made during many years of pioneer botanical exploration in eastern North America, just as the Flora Virginica of Gronovius was based on collections made in Virginia by John Clayton, the latter book prepared with the collaboration of the young Linnaeus who, later, based many binomials on the Clayton plants described by Gronovius. This is common knowledge, clearly stated in the two pioneer books. It is, therefore, a bit startling to read in the North American Flora, xxviiiB², in the treatment of the *Umbelliferae,* items like the following: *Ptilimnium capillaceum* (Michx.) Raf., resting on *Ammi capillaceum* Michx. Fl. Bor.-Am., with "Type locality: 'In campestribus Carolinae', collector unknown"; or *Thaspium trifoliatum* (L.) Gray, resting on *Thaspia trifoliata* L., from *Clayton,* with Linnaeus citing "*Gron. virg.* 31", said to have its type from "'Virginia', collector unknown". Surely, the editors could have found out. Such entries are similar to the enumerations of states from which species are known, with the state from which the type came omitted.

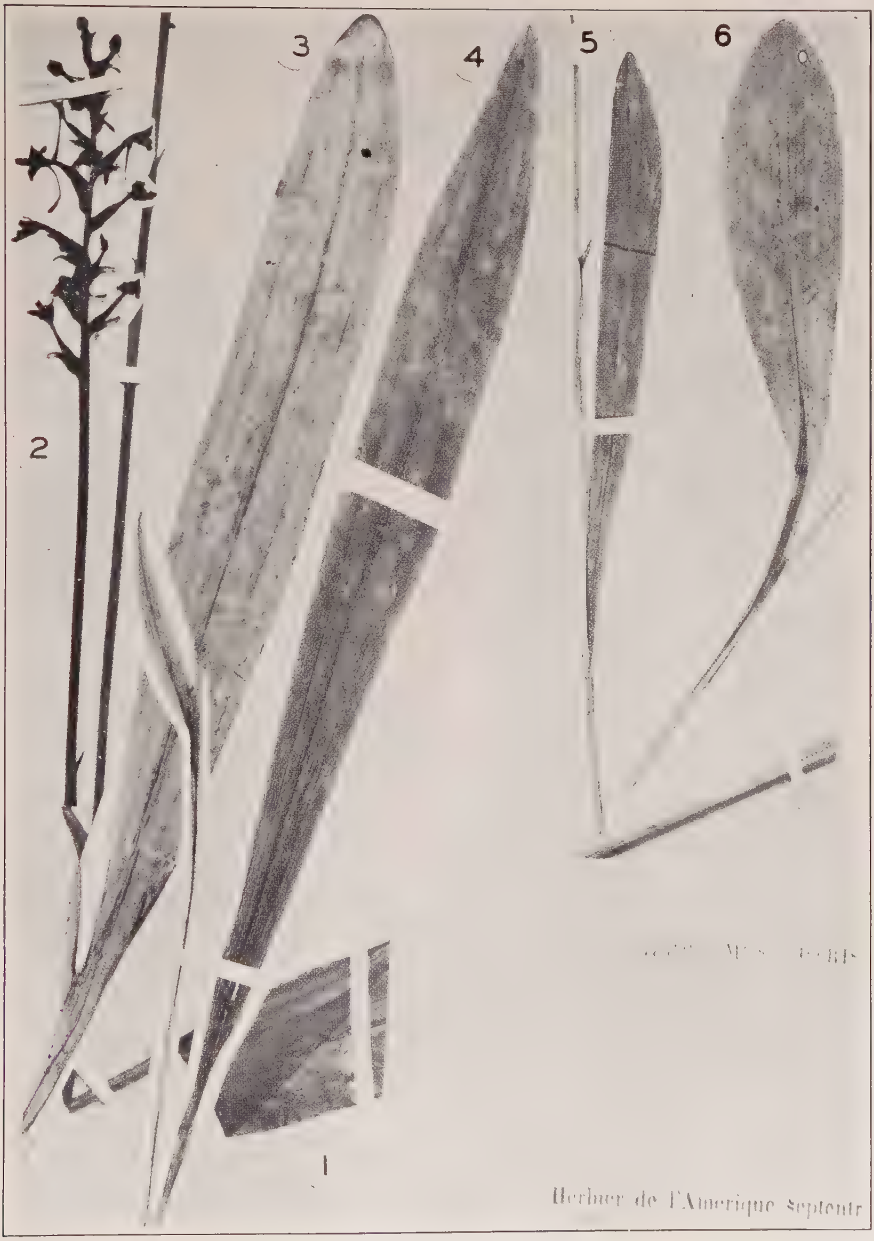

Photo B. G. Schubert

HABENARIA CLAVELLATA: FIGS. 1 and 2, TYPE of *Orchis clavellata* Michx., × 1, after *Cintract;* FIGS. 3–6, leaves × 1, from various localities.

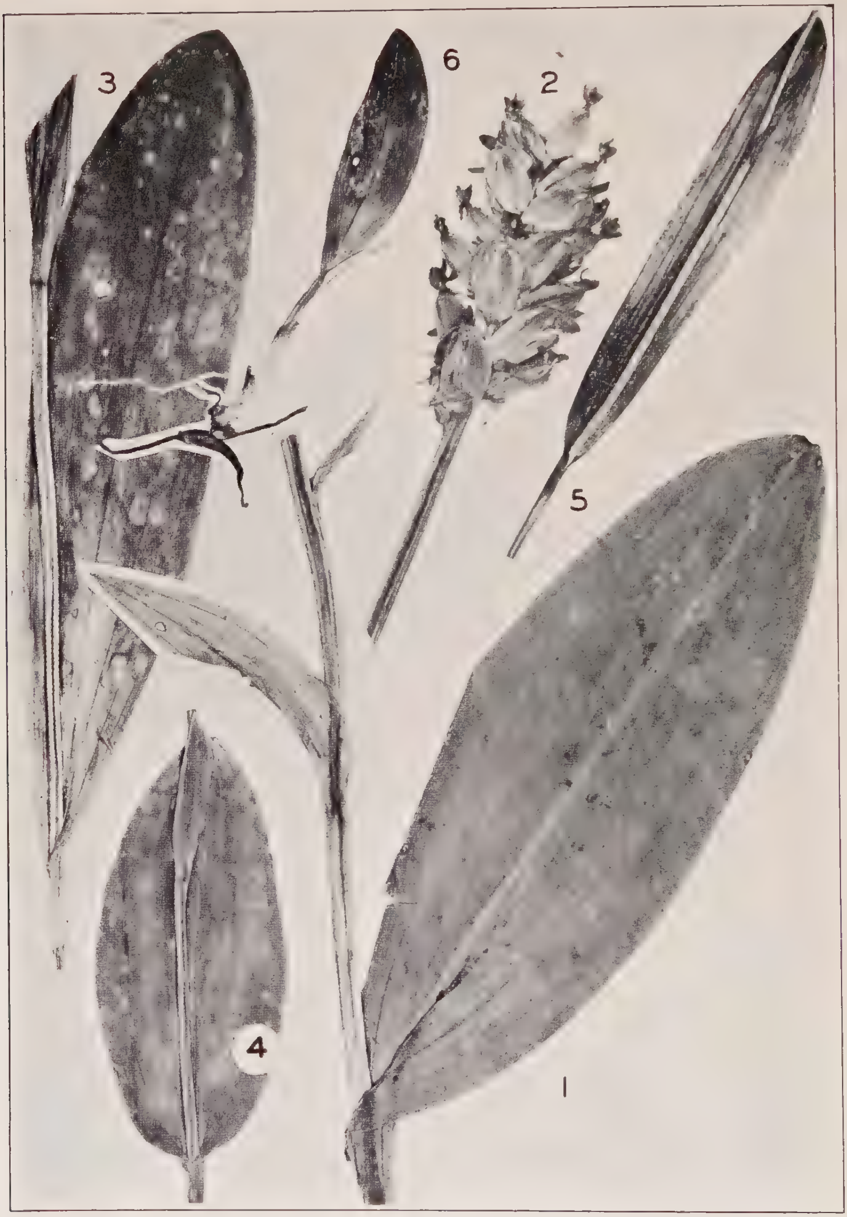

Photo B. G. Schubert

HABENARIA CLAVELLATA, var. OPHIOGLOSSOIDES: FIGS. 1 and 2, portions of TYPE, × 1; FIGS. 3–6, leaves, × 1, from various localities.

RELICT BOREAL PLANTS IN SOUTHEASTERN MINNESOTA.—It has long been known that several typically boreal plants occur as relicts in Winneshiek and Allamakee counties of northeastern Iowa. These include *Abies balsamea* (L.) Mill., *Mertensia paniculata* (Ait.) G. Don, *Rubus pubescens* Raf. and *Rhamnus alnifolia* L'Hér. Recently, in June 1941, this relict area was found to extend into Fillmore County of southeastern Minnesota and to be represented by a small balsam-fir stand near the town of Wycoff. The firs form a fairly dense stand along the north slope of a steep and narrow valley and seem to have perpetuated themselves by layering. In addition to many species quite typical of this region, the following typically boreal species were found associated with the firs; *Rubus pubescens* Raf., *Rhamnus alnifolia* L'Hér., *Cornus canadensis* L., *Pyrola secunda* L., *Pyrola chlorantha* Sw. and *Mertensia paniculata* (Ait.) G. Don. With the exception of this locality, the last species is known in Minnesota only from the north shore of Lake Superior and the remainder are largely limited to the coniferous forest region of northern Minnesota.—JOHN B. MOYLE, Minnesota Department of Conservation, St. Paul.

ANOTHER LATER HOMONYM.[1]—While going through the cards of the most recent issue (No. 189) of the Gray Herbarium Index, my attention was again drawn to a later homonym which has been in use for twenty years in the *Sapotaceae*. Because of the prior publication of *Manilkara emarginata* H. J. Lam (Bull. Jard. Bot. Buitenz. III **7**: 241. 1925) for an endemic species of the Hawaiian Islands, *Manilkara emarginata* (L.) Britton & Wilson (Bot. Porto Rico **6**: 366. 1926), based on *Sloanea emarginata* L. (Sp. Pl. 512. 1753), was illegitimate when published as a name for the "wild dilly" of southern Florida, the Florida Keys and the Bahama Islands. If one associates this northernmost western-hemisphere member of the genus with several Antillean entities, as Cronquist recently has done (Bull. Torrey Club **72**: 550–562. 1945), the proper name for the species-aggregation would be *Manilkara Jaimiqui* (Wright) Dubard

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[1] Thanks are due Mrs. Lazella Schwarten, librarian of the Arnold Arboretum, for her kindness in checking several bibliographic references.

(Ann. Col. Mus. Marseille III **3:** 16. 1915; based on *Mimusops Jaimiqui* Wright in Griseb. Cat. Pl. Cub. 164. 1866).

However, if one considers the "wild dilly" to be a distinct species—and I am at present inclined to take this stand—its proper appellation would seem to be **Manilkara bahamensis** (Baker) Gilly, comb. nov. (based on *Achras bahamensis* Baker in Hook. Icon. **18:** *t. 1795.* 1888). Synonymy of this species would also include[1] *Mimusops floridana* Engl. (Engl. Bot. Jahrb. **12:** 524. 1890), *Mimusops bahamensis* (Baker) Pierre (Not. Sapot. 37. 1891) and *Mimusops emarginata* (L.) Britton (Torreya **11:** 129. 1911).—Charles L. Gilly, Department of Botany, Iowa State College, Ames, Iowa.

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[1] The name "*Mimusops parvifolia* Radlk." (not *Mimusops parvifolia* R. Br. Prodr. 531. 1810; nor *Mimusops parvifolia* Kurz, For. Fl. Br. Burma **2:** 124. 1877; nor *Manilkara parvifolia* (Kurz) H. J. Lam, Bull. Jard. Bot. Buitenz. III **7:** 269. 1925) is not included in the legitimate synonymy of this species for the reasons stated in the following sentences. Although Pierre (Not. Sapot. 37. 1891) and most subsequent authors have cited this name as "*Mimusops parvifolia* Radlk.", Radlkofer published it as *Mimusops parviflora* (Sitzb. Akad. Wiss. München **12:** 344. 1882), basing his new combination upon "*Achras zapotilla* var. *parviflora* Nuttall", which he cites on the authority of A. Gray. Nuttall, however, published this variety as *Achras zapotilla β parvifolia* (N. Am. Sylv. **3:** 28, *t. 90.* 1849). Unfortunately Asa Gray included Nuttall's varietal name in synonymy under *Mimusops Sieberi* A. DC., which he believed to be the correct name for the "wild dilly", as *Achras zapotilla* var. *parviflora* (Syn. Fl. N. Am. **2:** 69. 1878). This erroneous citation by Gray seems best handled as a superfluous renaming of Nuttall's variety; *Achras zapotilla* var. *parviflora* Nutt. in A. Gray, therefore, is an illegitimate name under Article 60 of the International Rules of Botanical Nomenclature. Subsequent usage of this varietal epithet *parviflora*, including its elevation to specific rank by Radlkofer, is equally illegitimate; this particular epithet *parviflora* is, therefore, unavailable for transfer to the genus *Manilkara.*

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